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Edited by HENRY C. PEARSON—Offices, No. 150 Nassau Street, NEW YORK.

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NOVEMBER 1, 1902.

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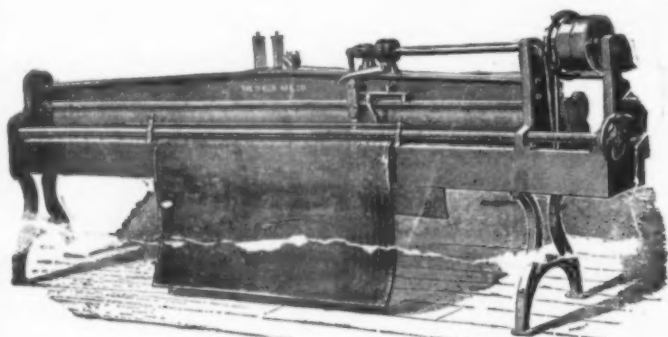
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THE RECENT LABOR TROUBLES.

THE strike in the Pennsylvania anthracite coal fields that has just ended, after having continued since May, was of far more general importance than is usual with industrial strikes. For one thing, it led to a wider appreciation of the idea that other interests are involved in such an emergency than those of striking workmen and their employers. The quality of coal mined in Pennsylvania is a necessity to millions of people, and in the settlement of the strike was recognized the injustice of having the public suffer through any disagreement between the interests directly concerned with mining. It was this consideration that induced the president of the United States, though not empowered either by the constitution or the laws of the country to take any official action in the premises, but as the representative of the whole people, to seek to bring about an understanding between the miners and the coal companies that would result in the resumption of mining. Fortunately the efforts of Mr. Roosevelt have been crowned with success, while not giving cause to either side to feel that its course has been vindicated. The principle involved has been the recognition of the right of the people not to be deprived of a necessity of life while the producers are engaged in a dispute, and doubtless one permanent result will be some legislation for the better protection of the peoples' rights in like cases in future.

Apart from this consideration, the subject possesses a special interest for the rubber trade in the United States because at this time the professional organizers of labor are endeavoring in more than one center to bring about the control of rubber workers in a body under regulations in which the employers of the latter shall have no voice. The history of the India-rubber industry in this country for more than a half century is full of evidence of fair dealing toward employes of every class, and the industry as a whole has been singularly free from the labor troubles known as "strikes." Around every large factory of long standing has grown up a laboring population living in contentment and comfort, one generation succeeding another in the employ of the same company, the workmen making good citizens, and many accumulating a competency, while the more capable have in time become superintendents, managers, and even proprietors. But such conditions do not prevent the breeding of trouble the moment that an element is introduced in the shape of a third party—the labor union—when the latter assumes to stand as an intermediary between employe and employer, and works assiduously to cultivate the impression that the interests of the two classes are antagonistic. What has happened in the anthracite coal regions may be duplicated, though on a smaller scale, in any rubber manufacturing center.

It appears that, until within a few years, no labor union existed among the anthracite coal miners, and that such cases of friction as did occur between the miners and their employers were usually settled to their mutual satisfaction after the two parties at interest had conferred. The large number of foreigners employed in the collieries, speaking a dozen or more different languages, made a

mutual understanding more difficult, but still serious troubles were avoided, and the same wage rate was long maintained, without regard to the selling price of coal, the rate being higher than could be earned by carpenters, railway employes, or in any other wage earning capacity in the same region. Then came the professional agitator, representing the United Mine Workers of America, a body which had gained great influence in the bituminous coal districts, pointing out that the miners, by paying monthly dues to the union, could call to their aid that mighty organization in bettering their condition, and gain the "whip hand" over the rich mine owners instead of remaining their "slaves." Such seed fell on fruitful ground, especially in the minds of foreigners and the thousands of boys employed. Local unions sprang up, in which every complaint made by a miner was magnified into a "grievance," with the result that foremen and superintendents soon found their time largely occupied with the settlement of troubles, in which they had to deal, not with the aggrieved employe, but with an outside influence. The owners of the properties found themselves with nothing to do but pay wages, all the details of management being assumed by the obliging gentlemen with headquarters at Indianapolis, Indiana, supported by the dues paid by the miners. The owners could hire whom they pleased, but if a new man couldn't show a "card" work was stopped until he paid for one, or was discharged. The owners could discharge a man, without the approval of the union, only by provoking a strike. The "local" ordered holidays, stopping all work, without giving notice to the owners, and sought generally to ignore the latter save on pay day.

In October, 1900, the first strike occurred, under the new conditions, to settle which the mining companies advanced wages 10 per cent., and the strike last spring was called to enforce a demand for "arbitration" relating to a further increase of 20 per cent. in pay for contract work, and an eight hour day with ten hours pay for time work. "Arbitration" in this case meant definite recognition of the Indianapolis headquarters as the medium for communication with the companies' own employes. Upon the refusal of the mine owners to grant such recognition the strike was called, after which time the owners became engaged in a struggle to save their property from destruction; non union men were intimidated to prevent their going to work, and tradesmen or others who countenanced the "scabs" were rigorously boycotted.

The spirit of the union has been best demonstrated in the fact that one great obstacle to bringing about the agreement suggested by President Roosevelt was the demand made by the mine owners that on the resumption of work their non union employes should not be molested, and the unwillingness of the union to consent to this. Another thing to which the union objected was a suggestion by the mine owners that any future grievances should be reported to them by committees of their own employes, instead of from a foreign source.

We have been unable to learn that the coal mine owners are opposed to the organization of labor, and we are certain that the rubber manufacturers are not, provided the

spirit of the organization is not such as to destroy confidence between employe and employer, and make direct communication between the two classes difficult or impossible. One thing certain is that the rubber industry in the United States never could have attained its present importance if Christopher Meyer, John H. Cheever, Joseph Banigan, and Elisha C. Converse—not to mention other forceful founders and their successors—could have dealt with their employes only through the medium of a union executive committee, working on the theory that all rubber workers are built in the same mold and that the most inefficient is entitled to the maximum wage for a minimum day's work. Another thing certain is that the industrial progress of Great Britain has been retarded by an incubus of tradesunionism which, instead of holding out an inducement to every worker to do his best, has tended to lower the standard of work to the capacity of the least competent.

If Mr. John Mitchell, the leader of the coal miners' organization, should happen to discharge an office boy and find himself unable to secure another of his choice on account of intimidation by a committee of some International Office Boys' Union, stationed outside his door, he probably would appeal to the police to stop the interference, although the same principle is illustrated in the working of the plan to prevent every man from mining coal who does not recognize Mr. Mitchell's authority in the premises.

BRAINS AS AN ADULTERANT OF RUBBER.

WISE men are ever counselling those to whom they wish well to buy brains, but until recently no attempt has been made to fix a definite commercial value for this commodity. It is particularly interesting to note that the first practical advance in this direction appears to have been made through the enterprise of a rubber manufacturing company. The fact has become public through a circular issued by the company, stating:

"We mix a dollar's worth of brains with every ounce of rubber we buy."

THE INDIA RUBBER WORLD expert, who is fairly up in compounds, was more than interested to see the goods produced by this new adulterant. He therefore secured a sample of the finished goods, examined it carefully by the ordinary tests, the following compound being indicated:

Pará rubber, 1 pound.
Litharge, 1 pound.
Brains, 16 pounds.
Sulphur, 6 ounces.

Just what grades of brains were used it was impossible to determine—whether coarse, medium, or fine, or indeed whether reclaimed brains were used. It appears, however, that the 16 pounds of brains displaces about 2 pounds of ordinary ingredients, say whiting and oxide of zinc, worth about 6 cents. The company, therefore, are paying \$16 for ingredients instead of 6 cents paid by their competitors. Of course, they may not pay a dollar a pound, for they say a dollar's worth, but we warn them that to compete they must get a grade of brains costing not more than $\frac{3}{8}$ cent per pound.

A GOVERNMENT REPORT ON RUBBER.

SINCE the United States department of agriculture has been understood for some time past to be devoting special attention to the subject of rubber culture, on account of the possibility of developing this interest in our new tropical possessions, the space devoted to this subject in its latest annual publication* and the treatment accorded to it are likely to prove disappointing to those who may look to this volume for information. In a report on "Agriculture in the Tropical Islands of United States," by Mr. O. F. Cook, botanist in charge of investigations in tropical agriculture, less than two pages, under the heading "Rubber and Gutta-percha," form the single reference to the matter under discussion. The spirit in which Mr. Cook writes is decidedly unfavorable to the formation of rubber plantations. He says, for example: "Notwithstanding widespread interest and the investment of millions of dollars, it cannot be said that rubber culture has passed the experimental stage, if indeed that period has been fairly reached." But there is no reference to any experiment made in any country, or to the results, in such detail as will enable the reader to look into the subject further with a view to satisfying himself as to the present status of rubber cultivation, or to investigate the reasons for "the investment of millions of dollars" which is still going on.

Mr. Cook says again: "Moreover, it is known that many rubber plantations established with the most lively expectations have been abandoned because the anticipation of a profitable yield of rubber from cultivated trees proved to be fallacious." This report would have been more complete and more convincing had it been followed by a list of such plantations and of their locations. As a matter of fact, there has not been time, since the systematic planting of rubber on a commercial scale began actively, for very many of the plantations to become productive, and, so far as we can learn, the results attained have been such as to encourage very many others to engage in this branch of planting. There is reason to believe that more rubber trees have been planted in Ceylon, the Malay peninsula, Burma, Mexico, Central America, and the West Indies during the last twelve months than in any previous year, and in the list of plantations on record in THE INDIA RUBBER WORLD office—which includes all that we have been able to gain any knowledge of during the past ten years—there has been no case of abandonment of trees once planted. Mr. Cook admits, however, that "similar disappointments, misapprehensions, and misrepresentations"—referring to the prospectuses of certain companies formed to plant rubber in Mexico and Central America—"have, of course, marked the early history of many finally successful and important industries."

The author of this report seems to think that a particularly weak point in the projected rubber planting enterprises is a lack of definite botanical knowledge as regards species yielding rubber, and he notes that "the traditional rubber tree of Pará has recently been described as a new species and found to be quite different from the *Hevea Brasiliensis*, with which it has so long been confused." We don't believe that any botanist to-day is prepared to designate without "confusion" the several species which actually yield the rubber product of the Amazon valley. But, none the less, the trees found there yield the same quality of rubber, whether termed *Hevea Brasiliensis*, *Siphonia Kunthiana*, or *Jatropha elastica*—all of which designations have been applied by botanists of standing to a single species, to say nothing of designations by writers of less reputation.

* Year Book of the United States Department of Agriculture, 1901. Washington: Government Printing Office, 1902. [8 vo. Pp. 846+xc plates.]

Of course, it will be wise for any intending planter of rubber to first be assured that the species which he is planting is one which actually produces rubber. But it is hardly fair for Mr. Cook to quote as a discouraging fact a recommendation by some unnamed person that *Eucommia ulmoides*—a plant found in China—be cultivated for the sake of Gutta-percha, when, as he states, "Gutta-percha would need to be worth \$60 a pound before the culture of *Eucommia* would become profitable." The fact that this plant contains a small quantity of Gutta-percha has been printed rather widely within two years past, but a careful reading of all the journals devoted to tropical planting fails to show in any case a recommendation that the species referred to be planted as a source of Gutta-percha.

We regard it as the province of a government bureau charged with the advancement of planting interests to guard the readers of its publications against wrong courses, no less than to point out new channels for profitable industry. But the greatest agricultural department in the world, and one whose statements are received with respect in every country, should not, in a comprehensive review of cultural progress for the year, touch upon the subject of rubber cultivation in such a way as to leave the impression that no practical results have been attained, that the "experimental stage" has not even been "fairly reached," and that many rubber plantations established have been abandoned. A not unreasonable inference from this report would be that there is no practical rubber planting in existence. However, Mr. Cook has since visited some rubber plantations in Mexico, and the results of his observations may appear in later reports of a different character.

THE UNITED STATES IS THE ACKNOWLEDGED HOME of the gum chewer. Not in England, France, Germany, nor Russia are to be found factories for the production of this luxury, nor a market for it. This is not only acknowledged by the benighted denizens of those lands, but they bear evidence of being proud of it. Who can assert, however, that this habit, if it has not a distinct civilizing effect, may not at least be a natural defense against certain weaknesses which some other movements of the jaws entail? An ancient saying has it "He that ruleth his spirit is greater than he that taketh a city." Its modern paraphrase might well be "He that holds his jaw is greater than he that taketh Manila." This then is the *crux* of the whole matter. Gossip, back biting, foolish speaking are all "knocked out" by the odorous strip of chiclé and sugar. And what of the national conservation of energy resulting from this general silent jawing—particularly among the petticoated? This is why the Filipino has a future equal to our own. He is a gum chewer, taps his own *Sapota* trees, and makes and markets lots of gum. Welcome, brother!

IT MAY HELP TO QUIET THE NERVES of some people who have been so badly frightened over the gigantic power of the Trusts to hear that on the date for the regular annual meeting of the American Bicycle Co. not enough shareholders appeared for the transaction of business. There are some other Trusts that, without the skilful application of stimulants, are not likely to survive long enough for the attacks by the outraged and injured public that certain prominent citizens are urging.

THERE IS NO MORE INTERESTING FIELD for study or experiment, in connection with the rubber industry to-day, than that offered by the tire interest. Some matters worth considering with regard to tires of various kinds are discussed in the letters in this issue from Great Britain and from Akron, Ohio.

THE RUBBER GOODS TRADE IN GERMANY.

[FROM THE "GUMMI-ZEITUNG," DRESDEN.]

THE situation of the rubber goods dealer in Germany to-day is not one to be envied. With keen competition on the one hand and a market that has halted in its advance, and even receded, on the other hand, it is no wonder that complaints are becoming more numerous. Viewing trade conditions in general, the rubber branch is not the only one which has cause for complaint; indeed, it has fared better than some other branches of the industry which depend upon the consumption of articles of luxury, and even of necessity, of the public at large.

The general condition of trade is anything but favorable. The hope entertained at the beginning of the year, that the lowest point had been touched and that an advance was about to be seen, has come to naught. The painful reaction of the losses of the general public, and most unfavorable weather conditions, have created a depression which, in certain branches, approaches apathy. The condition of business for months has been a dragging one and complaints are heard in every direction of slow payments, scarcity of cash, and the unreliability of commercial paper. That the rubber business is bound to be affected by this general condition is self evident, but a certain advantage in this branch is that the majority of rubber articles produced are a necessity. It is for this reason that the complaints from retail dealers in surgical and hygienic goods are less frequent than those related to the technical branches, where the depression has become most marked. Of course, at such times many complaints uttered may be dismissed with slight consideration, since some persons seem to feel themselves in duty bound to join in a general lamentation, even when no individual cause for it exists.

If competition would only refrain from working forever to depress prices! There are other means remaining to obtain trade. This, no doubt, is felt by every sound dealer, and yet if the circumstances are such that there is danger of losing a customer it is not easy to resist the temptation to cut prices, even to a point which renders a profit impossible. There is here what amounts to an utter lack of principle in trade. The desire to grasp every chance of doing business, and to let nothing escape or go into the hands of one's competitors even if at a loss, is what inflicts the deepest wounds in the rubber goods trade, and makes conditions worse than they should be even under the prevailing unfavorable state of trade.

The offers of goods now exceed the wants, and inclination to buy is lacking. But do conditions drive the people, or are the latter responsible for causing and shaping conditions? Does the business world intend to rest on the standpoint of fatalism—to suffer everything and await in indolence the solution of the existing conditions? That point we hope has not been reached, but if it should be so then, of course, "All hope abandon ye who enter here." We believe that yet man can influence and frame conditions, and there is none so powerful but that with energy and confidence it can be overcome. And, therefore, it is timely to counsel the rubber goods dealers to exhibit a little more courage and self reliance, a little more character and principle in business, and then matters will mend, slowly perhaps, but surely.

The first stand to be made must be against price cutting and the lowering of quality, and consumers must be made to understand that rubber goods are articles of trust and that the cheapest purchase is generally the dearest in the end. With patience and perseverance consumers can be made to see their own advantage. The cutting of prices will never build

up a lasting business; the trade will revert finally to conservative dealers and the less these recede from sound trade principles, the more loyal their clientage will be and the more difficult for competition to draw it from them. Firmness and character create confidence everywhere. The rubber goods trade was formerly renowned for its solidity, and so it should be now. Though transactions may fall off for the time being, that does not decide the value of a business, but the relation of profits to sales does. Every business man irreparably injures himself when he swells his sales at the cost of his profits. To be affable and obliging in all transactions should never be overlooked, but none the less the merchant should firmly refuse every transaction which does not guarantee the minimum fixed rate of profit. The competition which works on an unsound foundation, closing *à tout prix*, and continually introduces goods of lower quality, must finally run its course and be swept aside.

It is imperative, therefore, for every sound business man to plant himself, during such conditions as now prevail, so firmly as to be able to be prepared for the time of prosperity which is certain to come. Two things in the rubber goods trade to be held in the highest esteem are *price* and *quality*, and this is true to-day, perhaps, more than ever before.

TREATMENT OF "FICUS ELASTICA."

THE proper treatment of young "rambong" rubber (*Ficus elastica*—the rubber of Assam) is a matter upon which planters are not yet agreed. Mr. E. V. Carey, of Klang, Selangor, writes in the *Straits Agricultural Bulletin*, that his plantation of this variety, at the age of three years, contains many trees 25 feet in height, with a spread of about 30 feet in diameter, the foliage being almost impenetrably dense and reaching right down to, and in some cases, spreading out along the ground. The soil is the richest drained alluvial, the trees being apparently much more at home in it than on the hills, where the growth is very much slower, and nothing like the same quantity of leaf is to be seen. It has been regarded by some as proper to lop "rambong" trees when young and keep them to a single stem, plus one or two sturdy aerial roots, but Mr. Carey thinks that such pruning gives the trees too great a shock. On his own plantation, on forcing his way under the trees, he finds them to be "casting" numbers of both branches and aerial roots, as if these had been smothered by the dense shade and had rotted off naturally. It is obvious to him that the trees are healthy and that this falling off of the branches is natural and not a result of disease. "It is my belief," he adds, "that we shall have an infinitely bigger tapping area to work upon, when we once get to work in earnest, than if we had trimmed our stems up; whether the latex will be as rich in caoutchouc, when collected from the thick branches as well as the aerial roots and stem, remains to be seen, but I am sure the yield must be far heavier." One of Mr. Carey's trees, four years old, tapped on two successive days, yielded $\frac{1}{2}$ pound of dry scrap rubber. On the third day the flow of latex was so scant that the tree was left alone, but he thought that the treatment could be repeated within a month.—F. A. Calloway, also of Klang, reports in the *Agricultural Bulletin* the tapping of a *Ficus elastica* at the age of 4 years and 1 month, the yield being 5 ounces the first time and 2 $\frac{1}{2}$ ounces the second. He expects a yield of $\frac{1}{2}$ a pound per tree in the sixth year. R. C. N. Kindersiey, of the Inch Kenneth estate, Kajang, Selangor, informs the *Straits Agricultural Bulletin* that five Pará rubber trees, six years old, tapped for fifteen consecutive days in January last, on the "herring bone" system yielded an average of 1 pound 2 ounces per tree

AMERICAN PRODUCTION OF INSULATED WIRES.

*By Thomas Comerford Martin.**

WITH regard to the manufacture of insulated wires and cables, Mr. H. A. Reed, a veteran American leader in the industry, states that no braiding on wires was done prior to 1857. In the early days the wire was wrapped with cotton or silk, which was done in many instances by means of the machines employed to wrap similarly the wires used in women's bonnets, the machinery being also of the class used in wrapping the wire or strips used in crinoline. It appears that this machinery, in its first use on electric wires, was brought to the United States by an Englishman named Moore, who settled in Philadelphia and there founded a very prosperous industry, still in existence. It seems unquestionable that he covered wire for Professor Joseph Henry in the early thirties, to be used in some of the earliest experiments in telegraphy.

About the year 1857, under a patent for machinery used in braiding whips, an inventor named F. Bridges began to develop the art of putting braid upon wires. In 1859 he was employed by Mr. Bishop, one of the founders of the art of covering wire with Gutta-percha, and from that time on the art of braiding wire was generally developed. With regard to insulating wire with Gutta-percha, it would appear that in 1846 Siemens began experimenting in Berlin with Gutta-percha covered wire, and that in 1847 several miles of it, protected outside with lead, were laid. In the United States, as far back as 1849, a patent for the insulation of electric wires by glass beads was applied for by Mr. G. B. Simpson, who also, in 1858, applied for a patent on applying a solution of Gutta-percha over the metallic wire by a brush. It would appear, however, that in 1848 a patent was issued to Professor Durant for a solution of Gutta-percha by chloroform for this purpose. According to excellent authority,† as early as 1847 a piece of Gutta-percha insulated wire was tried near Elizabeth, New Jersey, for telegraphic work, and worked successfully. A similar piece was laid at the draw-bridge of the Passaic river.

In 1848 Mr. J. N. Alvord, in place of telegraphic wire strung across the Mississippi at St. Louis, from a shot tower to a mast, laid a Gutta-percha covered wire inclosed in lead, on the bed of the river, by means of a fleet of scows. This breaking down, he constructed the following year on the banks of the river, largely with his own hands, another Gutta-percha cable armored with No. 9 exterior iron wire, which appears to have served its purpose admirably. Other experiments followed until, in 1856, Mr. S. C. Bishop laid across the Hudson river, from New York to Hoboken, an armored cable with three Gutta-percha covered conductors. This was a successful, practical solution of the difficulties in carrying telegraphic circuits—the only electrical circuits then known—across rivers, etc., and touches the period of submarine cable work. Similar cables were at once laid in other rivers; the old masts for aerial wires were abandoned, and there was passed the last of the primitive stages that have led up to the development of an industry to which, in the census year, is credited a production of insulated wires and cables to the value of \$21,292,001.

* This article is an extract from United States Census Bulletin No. 245, dealing with "Electrical Apparatus and Supplies." Mr. Martin, who is one of the editors of *The Electrical World and Engineer* (New York), was the expert special agent in this branch of inquiry for the Twelfth census.

† "The Telegraph in America," by James D. Reid. Pp. 129, 130, 223.

So far as known all the earlier insulated wire manufactured in America was for such cables as are referred to above, and possibly for a small amount of interior work. Mr. Eugene F. Phillips, a veteran manufacturer in this field, referring to his ledgers of 1874, states that he believes he made the first braided wire used for any "outside" purposes in this country, the purchaser being the parent American District Telegraph Co. Similar wire wound with cotton, to run through window frames, was used, however, for telegraphic purposes as early as 1847. Braided office wire was used only to a limited extent until the advent of district telegraph and gold stock "tickers." The introduction of the earlier stock-repeating instruments, with three circuits, and of hundreds of messenger call-boxes created a brisk demand for such wire, but it was not until the telephone business began to develop, after the invention of the instrument in 1876, that the manufacture of insulated wire, both braided and paraffined, or "waterproof," as it was called, received a genuine impetus. Annunciator wire, which had been used for call bell work, proved to be very handy for telephonic interior connections, and this was succeeded by an enormous demand for telephone cords.

Out of this in turn, as well as from the desire for grouping together exterior telephone wires, came the manufacture of telephone cables, consisting, however, largely of iron wire No. 12, instead of the copper wire which is now universal. The troubles from induction led to the production of a tin-foil cable in which each conductor, after having been insulated, was inclosed in a strip of tin foil. Another form of insulated cable consisted of cotton covered wires bunched together to the number of 50 or 100, saturated with paraffin and pulled into a lead pipe. The development of this work led in turn to the gradual abandonment in cities of the aerial cable and its replacement by the insulated underground cable of the present day, to such an extent that while in 1893 the American Bell Telephone Co. reported 201,259 miles of wire on poles and only 90,216 miles of wire underground, in 1900, this same company reported 509,036 miles of wire on poles, a large part of which was in insulated cables, and not less than 489,250 miles of wire underground, the whole of which was in insulated cables. To this should be added 3,404 miles of submarine wire, all of it insulated as well.

In the meantime, the development of the electric lighting industry had brought into demand insulated wire, some of which, used for arc lighting, was known as "underwriters," but was more commonly designated as "undertakers," because of its deadly nature. The insulation of cotton, paraffin, etc., exposed to the air not being sufficient to withstand the destructive effects of the elements or the abrasion of tree limbs, its use resulted in a great many deaths. Shortly after the practical development of arc lighting the incandescent lamp was brought to commercial practicability, and its introduction stimulated to an unprecedented extent the manufacture of interior insulated wire. The flexible conductor was found particularly desirable, especially for pendent and movable lamps, and a high insulation was necessary as a protection against fire, although the voltage of the current was too low to endanger life. Phillips, of London, is said to have been the first to apply gum to such wires, which he did in the form of a very thin rubber tape, slightly vulcanized, and wound spirally around the conductors.

In this country Balata gum was probably used at about the same time by Mr. W. W. Marks. These wires, being improved in England and America, very rapidly superseded the earlier flexible conductors made by carrying the wires through strips of the textile webbing used in men's suspenders, the wires thus being kept apart from each other. At this period also the demand for wire of finer sizes increased. It will thus be seen that by 1880 a great stride had been made from the earlier ideas of interior insulation, and also from those which, in regard to exterior work, considered that an iron or steel wire galvanized with a thin coat of zinc was sufficiently insulated. Whereas the earlier metallic insulation was intended to preserve the wire itself, the aim of all the later methods has been in addition to prevent the currents of higher pressure and, larger voltage known to the modern electrical arts from escaping. The protection of the wire itself is a small thing compared with the protection which the more perfect methods of manufacture afford of life and property.

From the very first, Mr. Edison, in introducing his incandescent lamp system two decades ago, insisted that the chief circuits should have their mains underground, and the quantity of copper required for such low voltage work produced a condition necessitating such treatment of them. With this began the practice of laying all electric lighting circuits underground, a practice which is now universal in the larger cities, and also carried out in many of the smaller ones. Mr. Edison did not, however, manufacture insulated conductors in the ordinary sense, but ran copper rods through pipes, surrounding the rods with viscous insulating material and also with rope, in such a manner as to keep the sections of different polarity apart, if the two sides of the system were included in one service conductor. This process, however, has been virtually abandoned in favor of what is known as the "drawing-in" system, enabling lead covered cables to be inserted at manholes along any given street, and drawn through the ducts of the underground conduits.

The cables manufactured for such work for telegraphy and telephony, electric light and power, and electric railway service differ according to the work which they have to perform, but, broadly, consist of copper wires, single or stranded, surrounded by insulated material which is again protected by outer sheathings of lead and iron or steel wire. One notable improvement has been the utilization of paper as a means of insulation; and paper cables are now manufactured in increas-

ing quantities for all classes of work. The results with these cables may be summed up in the following remark:*

Experience has shown that paper thoroughly impregnated with insulating compound, such as the various tars or resins, forms one of the best insulating materials, provided the paper can be kept reasonably dry, as is insured by the use of the lead sheaths. A very large class of distributing cables are now made with paper insulation, and give the highest satisfaction in actual service.

It may be incidentally noted that up to the time of the census report none of the American manufacturers engaged in this industry had produced what are known as deep sea submarine cables, these cables being produced exclusively in England, Germany, and France. A great deal of work, however, answering to this character, for short lengths of sea and for shallower waters, had already been undertaken successfully in this country, and there is no indication from the returns that the heaviest operations of this character could not be safely undertaken. The equipments of the factories, the magnitude of the industry, and the immense range of the product, as disclosed by the census report, are a full justification of those who believe that America can produce her own submarine cable, if not for international work, at least for service in her own waters and among her own dependencies.

STATISTICS OF PRODUCTION.

IN connection with the foregoing report, the census gives the following details of the value of insulated wires and cables manufactured in the United States during the year ended June 30, 1900:

New York.....	\$ 6,119,878	Indiana.....	\$ 330,000
New Jersey.....	4,701,574	New Hampshire...	96,793
Rhode Island.....	3,912,534	California.....	65,665
Pennsylvania.....	2,696,155	Ohio.....	15,512
Connecticut.....	1,938,075		
Illinois.....	722,069	Total.....	\$21,292,061
Massachusetts.....	693,456		

The California production of insulated wire referred to in the above table is supposed to relate to weatherproof wire, from the Pacific Electrical Works, at Los Angeles. THE INDIA RUBBER WORLD is advised by the census office that the \$21,292,061 worth of insulated wire and cable work is entirely distinct from the production credited to the India-rubber industry in the census, although it is known that it covers an important amount of rubber work.

* Abbott's "Electric Transmission of Energy," 1900. Pp. 185, 186.

CULTIVATION OF "CASTILLOA ELASTICA" IN JAVA.

DR. SPIRE contributes to a French journal devoted to tropical planting* a comprehensive report on the planting of Mexican rubber (*Castilloa elastica*) in the Dutch East Indies, based on personal observations made in the summer of 1901, from which it appears that considerable interest in this species exists in that region. He mentions, by way of introduction, former reports on the same subject by Dr. P. Van Romburgh, of the botanical garden at Buitenzorg, Java, who has been much interested in watching the development of the *Castilloa* in that colony, and to which credit is given for some of the details presented here. Dr. Spire is unable, however, after a study of Th. F. Koschny's monograph on the *Castilloas*, to determine which species has been planted in Java.

* *L'Agriculture pratique des pays chauds*, Paris. 1-6 (May-June, 1902), pp. 689-698.

An interesting fact is that all the *Castilloa* plantations in Java have resulted from two trees planted as seedlings in 1883 by a Mr. Hofland, a coffee planter near Buitenzorg. These began to fruit in 1886, and in December of that year 136 plants from seeds yielded by them were placed in the botanic garden at Tjikeumeuh, in an open field, about 10½ feet apart, in two lines forming the letter V. In the third year twelve of these seedlings bore fruit, and in the fourth year the more thrifty of them were 55½ feet high, and had a girth of 41 inches. In 1901 there were 131 of these trees standing, measuring from 50 to 65 feet high, and 31 to 53 inches in circumference, breast high. Their crowns form sufficient shade to prevent the growth of weeds, though the ground is spaded up every year. A second planting was made in the garden in March, 1888, when 56 seedlings were set out 17½ feet apart. A marked difference in the size of these trees is now apparent, those standing near a lane

being much larger and more thrifty than those further from the open space, though Dr. Spire fails to mention the character of the growth, if any, in contact with the smaller trees. These trees range from $3\frac{1}{2}$ to 40 feet in height. The same conditions apply to a third planting, made in 1889.

In May, 1901, Dr. Van Romburgh caused some of the above *Castilloa* trees to be tapped, for the benefit of Dr. Spire. The Malays use for this purpose an implement similar to a butcher's cleaver, with which gashes, 5 to 8 centimeters [≈ 2 to $3\frac{1}{4}$ inches] long, and about 5 millimeters [$\approx 1/5$ inch] deep, are cut in the bark, obliquely, on opposite sides, and converging to a common line, from which the latex may be gathered. The cutting extends up the trunk as high as 3 to 4 meters. Two of the trees had been bled before, and the resulting scars were so thick that they interfered with the fresh tapping, but at least, 150 gashes were cut in those two trees that day. The sap flowed freely into a tin pail supported by a hook beneath the lowest cut, and to provide against any loss, large banana leaves were placed at the base of the trunk to catch any sap that might go astray. The latex was at times very white, and again of a brownish cast, while some incisions brought out only a blackish humor which exuded very slowly. The flow did not appear to depend upon which side the tree was cut.

The pails of latex, together with what was collected on the banana leaves, were taken to the laboratory and kneaded in water, next passed over a fine copper sieve, and then put away to settle. In time the rubber floated, the remaining watery material being drawn off from the bottom from day to day. At the end of the eighth day the cake of rubber was removed and placed under a press to remove any remaining water. Returning to the field on the day following the tapping, the man in charge collected from the wounds on the trunks any shreds of rubber that had resulted from the spontaneous coagulation of latex, which, when cleaned, were as valuable as that prepared mechanically.

In general practice the collection of the latex is performed wholly by Malays, an overseer assigning to each worker a certain number of trees which he must visit each day. At least $\frac{1}{2}$ catty [\approx about 1 pound] of Caoutchouc must be delivered daily, for which the worker is paid 10 cents, gold, without regard to the hours of labor. The men are watched closely to prevent the reckless tapping of the trees and their ultimate destruction. When brought to the factory the latex is cleansed by women in running water, then exposed to the air, but in the shade, for three or four days to dry, and finally sacked for shipment. The cost of collecting, cleansing, drying, and sacking, amounts to about 3 florins a picul [\approx \$1.21 for 132 pounds.] A *Castilloa* tree eight years old should yield an average of 175 grams [$\approx \frac{1}{16}$ pound] of rubber. In 1900, 2849 *Castilloas* yielded 7 piculs [\approx 924 pounds] which sold for 2100 florins [\$844.20]. A neat little income is derived from the sale of seeds, the usual price being 6 francs per kilogram (3000 or 4000 seeds). They are packed in layers of charcoal dust and will keep for twenty days. Many seeds are shipped from Loebang, particularly to Sumatra, where the culture of *Castilloa elastica* has been begun on a large scale, as at Tebbing Teuggi Deli, near the north-western extremity of the island.

To return to the details of the tapping done under Dr. Van Romburgh's supervision, the weight of latex obtained from six of the trees tapped on two days was as follows:

	1st Day.	2d Day.	Total.
First two trees.....	grams 28	130	158
Second two trees.....	220	290	510
Third two trees.....	125	205	330
Total.....	373	625	998

The result in dry Caoutchouc was 340 grams for the first day's tapping and 600 grams for the second, or a total of 940, equal to slightly over 2 pounds, of a quality then valued at 5 florins per kilogram [\approx 91 cents a pound]. The two trees indicated in the table as giving the largest yield were planted in 1884, and are not elsewhere mentioned in Dr. Spire's article.

Dr. Spire learned from Dr. Van Romburgh that in 1886 there were planted at the botanic station at Tjidjerock 60 *Castilloa* seedlings, supplied by Mr. Hofland, already mentioned. Half were planted in moist and swampy land, and the remainder in a high and dry location. The former did not thrive, and were transplanted. In 1891 they all fruited and 20,000 seeds were gathered. The details of planting are not given, but in 1893 there were 10,000 trees standing as the result. Later plantings were made from seeds from the same source, so that by 1900 there were about 26,000 trees standing, but none had been tapped at last accounts.

In August, 1901, Dr. Spire visited the *Castilloa* plantations at Pamanoeakan. On the premises of Mr. Van Gent, and situated near his coffee factory, was a tract planted to rubber in argillaceous, ferruginous soil, which had been burnt over at one time with a view to erecting buildings there. The plants were about 10 feet apart, but had attained an average height of 2 meters and the crowns were touching each other. In the same vicinity another and larger tract of 50 bouws [$\approx 87\frac{1}{2}$ acres] had been planted for 19 months. At the same date the proprietor had planted *Castilloa* seedlings along paths in his coffee estate, and these had attained an average height of 4 meters. At one time a thousand *Castilloa* trees on his plantation had been attacked, apparently by some fungus growth, and were removed and burned.

Dr. Spire also visited the plantations of Mr. Dinet, at Loebang, where *Ficus elastica* and *Castilloa* were growing mixed, about 18 months from planting. The young rubber, set in ground covered with cocoanut palms, had not thriven well, especially the *Castilloa*, which only in a few cases had grown up to 2 meters. This slow growth was attributed to the hardness of the ground caused by the interlacing roots of the palms, and the owner was attempting the difficult task of eradicating the latter. Mr. Dinet was convinced in favor of growing the two kinds of rubber together. The *Castilloa* grows much more rapidly than the *Ficus*, but does not interfere with it. The altitude here is only a few meters above sea level. Experiments in planting *Castilloa* in the neighborhood of Korwang, at an altitude of 3500 feet, were unsuccessful.

At the state plantation of Gutta-percha, at Tjipetir, 2000 feet above the sea, Dr. Spire noticed some *Castilloas*. One tract, planted 18 months before, showed satisfactory growth, and on another, trees 28 months old measured from 55 to 60 inches high. About 100 eight year old trees were as well developed as those at Tjikeumeuh. In some of the coffee and cinchona plantations in the eastern part of the island a few specimens of *Castilloa* may be found, which, though receiving no attention, have developed well. One, six years old, was $42\frac{1}{2}$ feet high and $32\frac{1}{2}$ inches in girth.

Herr Rudolf Schlechter, of Germany, who visited Sumatra last year, in an account of his trip in *Der Tropenpflanzer* (Berlin), mentions two plantations of *Castilloa*—that of Mr. Runge, Deli Mæda, and one at Haut Tador. In the first named the two year old trees were 12 feet high and at 3 feet from the ground measured 11.8 inches in circumference. At Haut Tador he saw 50,000 *Castilloa* plants in a nursery, awaiting the rainy season, to be planted with *Ficus*. At Boeloe there were 76 *Castilloas*, one planted in 1898 measuring 17.7 inches in circumference. The latex was abundant, but charged with resin.

THE INDIA-RUBBER TRADE IN GREAT BRITAIN.

By Our Regular Correspondent.

FROM small beginnings undoubted though not very rapid advance has been made by the rubber carriage tire in popular estimation. It is clear, however, that much of the initial prejudice which barred the way to rapid progress has been overcome, and it is a safe prediction that the

THE SOLID
VEHICLE TIRE
TRADE.

near future will see the business increase at a greater ratio than in previous periods which can be pointed to. It may not be uninteresting to look at one or two features of the trade, more especially such as have undergone somewhat material alteration. To some, but only a small extent, in the past the rubber manufacturer who actually supplied the tire applied the tire to the customers' wheel or supplied the whole wheel with the tire attached. To a greater extent this business has been done by intermediate firms, most of whom were owners of some patent and who have had the tires manufactured for them at some one or other of the large rubber works. Of late, however, a reciprocal feeling that the other party is getting too much out of it seems to have pervaded both the tire company and the rubber manufacturer, and while the former have sought to manufacture their own rubber and reserve a profit to themselves, the rubber manufacturer has begun to ask himself why he should not attach the tire to the wheel and make something out of so doing. This is now being done by one very prominent rubber works, but it is too soon to say whether the anticipations of profit are likely to be fully realized. Certainly the difficulties in the way of progressing in this direction are nothing like so great as lie in the path of the middleman who thinks he may as well put down rubber machinery and make his own tires. The business is by no means a simple one, and too much care cannot be taken by those who propose to go into it to see that the hands they engage for the purpose are really competent to carry out the work. There are so many points in connection with the composition of the mixing, and especially with the vulcanization, the disregard of which can only bring trouble and loss; such points are not common property, being limited to those comparatively few firms who have arrived, if not at perfection, at any rate at a satisfactory result by dint of much labor and expense. This may seem to be merely the enunciation of a platitude, but it cannot be too much emphasized. It may be added as a final word that the solid tire seems to have quite superseded the pneumatic for vehicles, the latter being now very rarely seen.

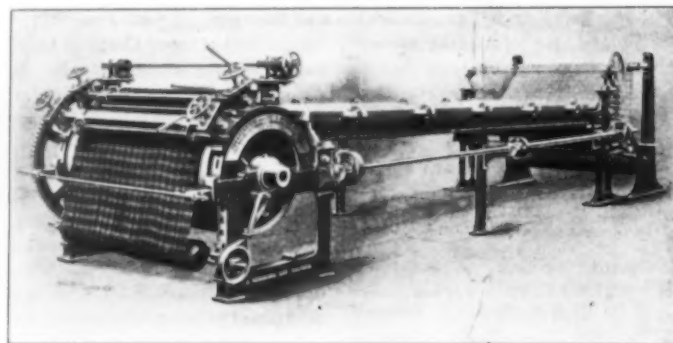
THESE plantations, the property of the Las Cascadas Plantations, Limited, having its office in Manchester, have recently been the scene of Dr. C. O. Weber's travels and scientific observations. From his compendious report to the directors it is clear that he considers the property likely to prove highly

remunerative in the near future, though he recommends the immediate improvement of the transport facilities, both on the estate and in the way of railway connection. The latter is a simple matter, as the line from Colon to Panama runs through

LAS CASCADAS
RUBBER
PLANTATIONS.

the property. Some of the trees, which are the indigenous *Castilloa elastica*, have been planted twelve years and rubber from these is now in England being tried on a manufacturing scale. Dr. Weber's idea was to prepare the rubber on the spot ready for use and this has been done to a small extent; a novel procedure which will be watched with interest. I note that formalin was the antiseptic used for the purpose of destroying albuminous matters which as is well known have when included in the coagulated rubber done a good deal to reduce its market value. I note the following sentence from the report *in extenso* because of the incredulity with which it will doubtless be received by old-fashioned rubber manufacturers: "The rubber prospects at Las Cascadas are excellent; the rubber obtain-

able is of such wonderful quality that it will find a readier and quicker sale, and at higher prices than Pará rubber." Leaving out of account the probability of the manufacturers rushing to buy at a higher price than Pará, it will be quite sufficient to contemplate the upsetting of all existing ideas as to the rubber from a particular tree varying in itself and not by reason of its admixed impurities.



FRANKENSTEIN AND LYST SPREADING MACHINE.

I am in the present merely giving the words of the report without expressing any opinion of my own; facilities will no doubt be afforded the trade of proving how far the important statement can be substantiated. At any rate the Las Cascadas Co. are to be congratulated on going to the expense of an investigation which is bound to have far-reaching results, and results moreover which will by means be limited to those who have borne the burden of their production.

ALTHOUGH the process of spreading is still mainly carried out in Great Britain on the original familiar type of machine, one or two patented machines have been introduced in recent years, which embody the results of careful thought and experiment in order to obtain economy in labor. The first special machine we shall refer to is the Frankenstein and Lyst machine, which is made by Messrs. Joseph Robinson & Co., engineers, Springfield Ironworks, Salford, Manchester, and which the patentees claim to embody the greatest improvements to date in proofing machinery. The following is a brief description of its capacity and some of its important points:

IMPROVED
SPREADING
MACHINES.

The output per week of 48 hours is 120 pieces, or about seven times the capacity of the ordinary spreader; in other words, it equals seven ordinary machines and a calender. The machine is adapted to all kinds of fabrics, and the work turned

out is, it is claimed, superior to that done in the old type of machine. The machine is attended to by one man, the labor necessary being very slight, as there is no carrying of the pieces backwards and forwards, some four, five, or six times, until the spreading is completed, as is the case with the ordinary machine. The fabric once passed through this machine is completely proofed and also calendered at one operation, and is ready for the vulcanizing process. The contingent risks of damaging the fabrics are thereby minimized, as when spreading in the old way on each operation of coating, there is liability to accident. Absolute uniformity of spreading is also obtained by this machine. The process being completed in one run, it is not necessary to alter the "doctor," which has to be done with each coating of the fabric in the ordinary machine. There are consequently no risks from friction, which are incidental to the high speeded machines known as flyers, a type which for years have been tried unsuccessfully. The space required for the machine is the same as that of the ordinary spreader. The plans required for a good sized factory, viz., six ordinary machines and a calender worked by seven men, would be reduced to one machine attended by one man and a boy and in the space occupied by one ordinary spreading machine. The rubber-covered roller is naturally, on account of its large size, an item of considerable expense, and it has been raised as an objection to this patent machine, that in case of fire the loss incurred would be large. To this it should be said that inquiries made at the works where the machine has been in constant use for three years shows that the probability of loss from this cause has

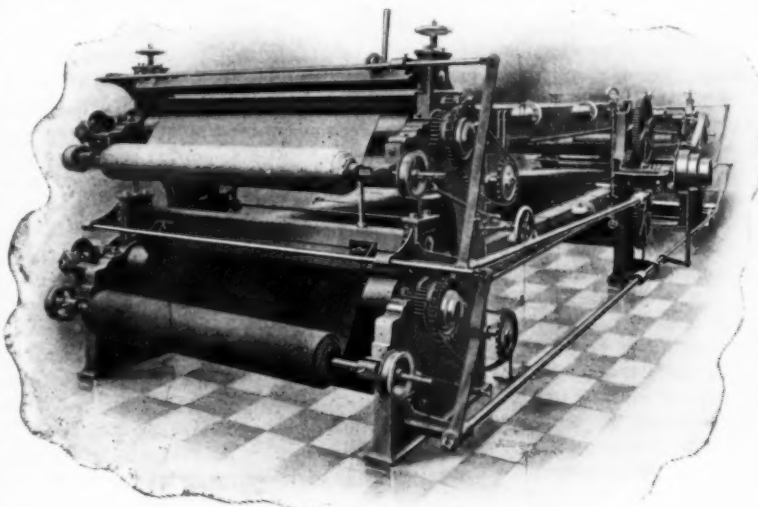
been exaggerated, no fire having occurred, an immunity which is due a good deal to the fact that the non spreading is not so tight as in the ordinary machine. A large diameter roller is necessitated because of the three "doctors" employed. It may be said, in conclusion, that the machine is in regular use at some of the most important rubber works in Great Britain, and that its potentialities as described are not the outcome of calculation, but the results of actual practice.

The next machine that demands attention on the present occasion, is the Rowley and Walmsley double deck machine, made by Messrs. Iddon, of Leyland, Lancashire. There are two spreading gages and calender rolls at each end of the machine, two rolls of cloth being coated simultaneously by one man from alternate ends of the machine, until finished. It is claimed that by the dough being thus spread in alternate directions, liability to porosity is removed. The chief saving in labor is in the winding back and handling of the rolls of cloth, as in the ordinary machine, and this saving, together with one or two others, amounts to something considerable in a week's work. Both in this machine and in the last one, the drying tables are considerably longer than in the old type, and this of

course has a good deal to do with the extra cost of both. In the machine under notice, the two drying tables are each 20 feet long, which is found sufficient to expel the naphtha when the cloth is passed at the rate of 8 to 10 yards per minute. The total length of the machine is 27 feet long and 10 feet wide over all, the rollers, of the hard rubber type, being 10 inches in diameter—very much less than in the machine just described. It is understood that, besides having been adopted in English works, a French works has taken it up.

SEEING that somewhat serious allegations have been made from time to time by the lower ranks of the army against the ground sheets served out in South Africa, I took the opportunity the other day of interrogating an officer who has been largely concerned with supply and transport duties in South Africa. His reply to my query as to whether any complaint as to quality had come to his knowledge was in the negative; as far as his sphere of operations had extended he said he had heard nothing in the nature of a complaint as to bad or inefficient waterproofing. This of course does not say anything as to the case in other districts of the wide area of operation, but at any rate it seems worthy of mention as the complaints that have been made have gained considerable publicity in the press. It is possible that a shortage of new material was experienced at a certain time, as a considerable number of ground sheets fell into the hands on the occasion of a train capture the details of which it hardly seems necessary to revive on the present occasion. With regard to other waterproof goods, the valise bed which forms part of

RUBBER GOODS
IN THE LATE
SOUTH AFRICAN
CAMPAIGN.



ROWLEY AND WALMSLEY SPREADING MACHINE.

the officers' equipment on the *veldt* has had a good trial and is highly spoken of. I don't know who are the makers of this article, but it is probably some firm who buy the waterproof double texture from the rubber works and who make up the valise at their own factory. Another article which may be mentioned as having been found of great service by officers is the rubber Wellington riding boot, commonly known out there as "gum boots." These of course do not form part of full dress equipment, but they have been found very useful by the army service corps officers whose varied duties outside the sphere of active belligerency render it advisable to have recourse to the outfit of the sportsman rather than of the soldier. The particular gum boots which I have inspected bore the name of the Liverpool Rubber Co. I don't know whether other firms have shared in the business, but I was informed that a much larger business might be done in them, as the supply had not kept pace with the demand. This fact might be worth the attention of those whom it chiefly concerns. Though not exactly apposite to this paragraph, I may perhaps say that the old custom of serving worn out material to our volunteers in camp has not yet fallen into desuetude. I had an opportunity this

ast summer of examining the ground sheets of a brigade camp and found that many of them were too far gone to be of much use from a waterproof point of view. The rubber could be easily rubbed off by the finger at the places where superficial cracking was apparent. It struck me that it was not quite the thing to serve out such equipment to the unsuspecting private, though personally I have no interest or animus in the matter and certainly have no wish to take an active part in any demonstration against the authorities. Perhaps it is only natural, but any knowledge of rubber, its properties, peculiarities, or potentialities, does not seem to exist in the mind of the average officer such knowledge would appear, except in rare instances, to be limited to those astute officials who regulate contracts for rubber goods at headquarters. So much for matters military. Pursuing the querulous note raised in this paragraph, a few words will now be said on—

WHETHER or not it is due to slackness of trade in general and consequent diminution of profits, there certainly seems a greater tendency at the present time to make complaints as to quality of goods than used to be the case. This remark applies generally, though I am here only concerned with its limitation to the rubber trade. No doubt a good many complaints are quite *bona fide*, but some which have recently come to my knowledge certainly cannot come under that category, and it is hard indeed for the manufacturer to incur the odium of the buyer when the fault lies entirely with the latter or his employés. There seems no reason at all to doubt that in certain cases, which I do not feel inclined to specify here, the complaint made was honest enough as far as the firm or its responsible officials were concerned, but there is also no reason to doubt that the fault lay entirely with the workmen of the buyer who, fearful of experiencing direful consequences should they confess to a delinquency, resolved to attribute the blame to the rubber manufacturer. I am as I have indicated only writing in general terms, and therefore it would serve no useful purpose to prolong this paragraph; it seemed advisable, however, to refer to the topic and not at all by way of counselling the guilty to oppose genuine claims, but in order to utter a warning against a regrettable tendency of the day.

At the present time one hears on all side growling about the fines inflicted on motorists for exceeding the legal rate of speed in public highways, this action being likely, it is asserted, to seriously retard the popularity of the motor and consequently restrict the profits of those who manufacture the machine and its accessories. Undoubtedly this year has seen the motor car make big strides in popular favor, and the question as to the limit of speed allowable, which is being fought out in the London papers, will sooner or later have to engage the attention of the legislature. To judge by the tires in use among members of important automobile clubs, it would seem that the pneumatic is almost universally favored, though as a set back to this statement it may be said that a prominent member of the India-Rubber Manufacturers' Association pins his faith to solid tires. The latter seem to give most satisfaction to the devotees of heavy machines and moderate speed, while those who have attracted the notice of the police prefer a machine as light as possible with pneumatics. But whatever tire is used, there can be no doubt, from the signs of the times, that the rubber motor tire will shortly show a greatly accelerated demand, and this fact cannot but prove welcome now that the cycle demand is practically stationary. The movement, however, is not likely to be so rapid as was the case with the cycle tire, because of the very good reason that those who can afford to

purchase a motor car are not to be found in every grade of society, and the increased use of the lumbering goods vehicle will not affect the rubber manufacturer.

THE financial matters in connection with the reorganization of this company do not seem to be progressing very favorably.

The call of 5 shillings per share in order to raise £20,000 to pay old creditors 6s. 8d. in the pound and to provide working capital has not yet at the time of writing been sufficiently responded to. The works, however, are still in operation under the guidance of the official receiver.

MR. WADDICAR, whose experience has been gained in Scotland and at the works of the Leyland and Birmingham Cos.,

has started in business in a small way at Newton Moor, near Hyde. Textiles and belting will be chiefly manufactured.—With regard to the Clarendon Rubber Co., recently stated in these notes to have been started at Hyde, it should be said that the business carried on is that of merchants in certain classes of rubber goods and not of manufacturers in the strict sense of the term.

THE death of John Hall Gladstone, F. R. S., removes one of those very few scientists who have made the constitution of

India-rubber a subject for research. The work done by Dr. Gladstone in conjunction with his assistant, Mr. Hibbert, with regard to the molecular constitution of India-rubber, was published in the proceedings of the Chemical Society of London for 1888, though, owing to its somewhat abstruse character and from the fact that it had no technical bearing, it may be taken that it is not at all familiar to the rubber trade. It will, however, always have its value for subsequent investigators, and no doubt the future will bear some practical testimony to its worth. Dr. Gladstone belonged to that small band of chemists who, possessed of ample private means, spend their time in scientific investigations, pecuniary results not coming into their calculations. As a man of wide philanthropic proclivities many societies besides the Chemical—of which he was a member for 54 years—will miss his genial presence, and none the less will this regret be shared by those who, like the writer, can recall conversations in his research laboratory, which was situated in one of the thoroughfares in the vicinity of his house in Pembroke square, in the West end of London.

FROM what I can gather, there does not seem any violent rush on the part of the trade to participate in the advantages of this material as distributed from Glasgow. The very moist state in which it has come into commerce is certainly a bar to its utility, and, judging from remarks which have been made in my hearing, its prospects of ultimate success are anything but roseate unless it can be supplied in a dry condition. A material that loses over 40 per cent. on drying at 100°C. will hardly commend itself to the trade, and for more reasons than one. I don't pretend to any special knowledge of the manufacture myself, but understand that the fatal tendency to absorb moisture has militated greatly against the success of viscose bodies in the textile manufactures.

JAMES THAME (in United States patent No. 707,654) treats crude rubber for the removal of objectionable matter by the submergence of the rubber in small pieces in a hot alkaline solution until the interstices of the rubber are in contact with the solvent. The solvent charged rubber is next submerged in water or other liquid of less specific gravity than the solvent for such time as will allow the solvent to act upon the rubber surfaces, after which the rubber is washed to remove the dissolved matter and any residual free solvent.

COMPLAINTS
REGARDING
RUBBER GOODS.

MOTOR
NOTES.

HYDE
IMPERIAL
RUBBER CO.

NEW WORKS.

DR. J. H. GLADSTONE.

VISCOSE.

THE CHICLE INDUSTRY OF MINDANAO.*

I AM writing to you from the locality of Zamboango, one of the largest towns on the island of Mindanao. This narrative will concern the production of the substance known as Chicle and the manufacture of the same into form for the commercial centers of the country. South American Chicle and the gum resulting from the treating and preparing of the same has had a place in the markets of the world for many years. Gums of this nature from this portion of the world are not so well known. It is only very recently that the country has been opened to the extent of permitting Americans and others to investigate into these natural growths of a commercial product.

The Moros for years have secured the milky, white saps from the gum producing trees of the country by creating wounds in the barks. Oftentimes the blows of knives or pricks with spears form the only means by which crevices and fractures are effected in the rough bark, to the extent of developing a flow or an oozing of the valuable gummy substances. There is a cut made in Fig. 1, showing one of the systems employed by the natives for securing the flowing saps. When the gummy liquids pass from the tree to the tube of bamboo *a*, these liquids are very similar in consistency and appearance to milk.

*From *The Paint, Oil, and Drug Reporter* (New York), September 29, 1902.

The bamboo tube is usually suspended horizontally by means of the crosspieces, *b*.

Shortly after the mass of liquids is exposed to the air, it begins to harden and in a short while can be cut or broken into cakes. The cakes are often shipped to the coast from the interior in this form, or, as is the case in some places, the cakes of gum are reworked into desirable order and forms for transportation to other countries or to centers where there are agents who handle the gums of the country. At present writing there is one agent of a foreign commercial concern here who is buying gums at market values in large quantities for shipment.

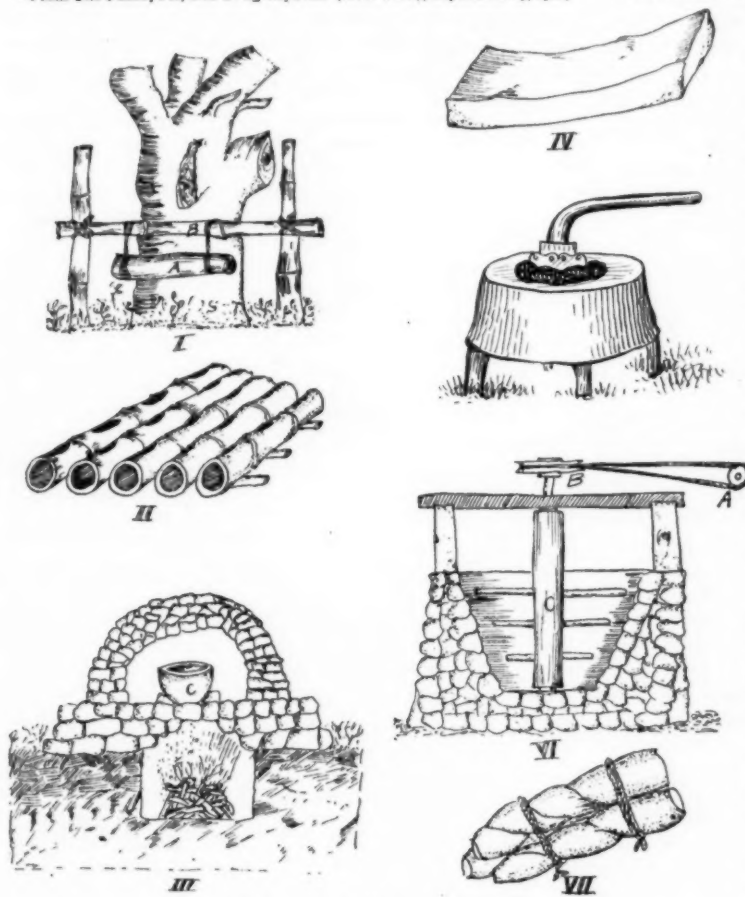
Another mode of securing this white sap is from the unripe fruitage of the tree, which is very similar to the *Sapota* growths of Yucatan.

The natives of Mindanao use some crude devices in the Chicle gum industry. In Fig. 2 is the awkward, yet effective, manner in which the masses of gum like saps can be exposed to the action of the atmosphere without undue wastage due to specks and foreign matters falling in. A series of bamboo tubes are adjusted side by side, as shown, and these are joined with bamboo strips underneath and fastened to crosspieces. The latter are arranged so as to support the whole affair about

three feet from the level of the ground. There are openings cut out from each of the tubes at intervals, as shown, and the air can impregnate, and with the heat and drying influence of the sun the desired results are secured. After the mass begins to form in the tubes it is forced out before it hardens and cooking follows.

Your correspondent sketched two or three different designs of cook ovens of native make, and shows one of the most practical kinds in Fig. 3. This is erected by first excavating the earth to a depth of about four feet, and three feet square for the fireplace, as represented. Then stones are put in position for the forming of the archlike structure immediately over the fire, on which rests the pot of iron containing some of the lumps of Chicle in readiness for dissolving and cooking. This iron vessel is designated *c*. Above this vessel is still another arch of stone, describing a more definite circle. Several native workers are required to keep the fire going and the vessels properly filled. These ovens last indefinitely when properly built, as those I saw were very old indeed. The cooking operation involves several others, such as the sweetening and flavoring. The natives use the common brown sugar product for sweetening purposes. The natives discolor the substance by employing stains squeezed from leaves, herbs, barks, etc. Some of the coloring barks are those from which the dye-substance collectors of the country obtain stains. Reds, yellows, and blues in colored gums are prominent.

After the gummy stuffs are properly sweetened and flavored they are usually rolled out into sheet like order, so that slabs of the substance can be secured, as in Fig. 4.



CHICLE WORKING IN MINDANAO.

After a time the substance is in readiness to shape into loaves, and this is done by the natives in several ways, the best I saw being the rolling of the gum into thin sheets, the weight desired, and then cutting through with knives made for the purpose. A white powder substance is scattered over the surfaces of the gum while this is going on, so that the natives can handle the stock without danger of the fingers adhering to and soiling the matter.

They have a process of kneading, which is used in connection with the finer grades of gums, and this device for accomplishing the work is shown in Fig. 5. It is a crude bit of work, as shown, involving the use of a tree stump or section, which is chipped out in the middle to form the oval depression in which the round-nosed instrument of hard wood can be turned by manual labor. The particles of the Chicle are granulated in this trough, beneath the weight and frictional surface contact of the rounded device.

In Fig. 6 is shown one of the strange devices employed by the Moro Chicle workers for mixing and working the material. This contrivance is made with stone, heavily erected, so as to make the walls firm, and the interior is coated with a cement-like surfacing, which results in the smoothing and rounding off

of the tub. Inside this tub sets the upright post, *c*, in which there are projecting arms of wood, as shown. This affair is revolved by a belt passing from wheel *a* to wheel *b*, on the shaft. Manual or water power is usually employed to give the necessary turning movement to the gearing, *a*. I saw several devices like this, but in most cases they were out of order and unfit for service. The gums here, when finished, lack the flavors employed by American makers. The only flavors utilized are such as can be procured readily.

Costly wintergreen, for example, is not known here. Malt, mint, etc., however, are used. The natives chew the gum to quench thirst. They use it much as they use the tooth staining beetle nut.

As to packing for transportation, you can see that the packages are put up in the form like Fig. 7, as a rule. The substance is rolled up in mats, into various packages, and three or four of these packages are tied up together, as in the view. The writer is inclined to believe that there is money in the Chicle industry of Mindanao for capitalists. The gum materials can be purchased from the natives very cheaply, and at the seaports, where the stocks can be properly packed for export.

Mindanao, Philippines, July 17, 1902.

AMERICAN CAPITAL IN RUBBER EXPLOITATION.

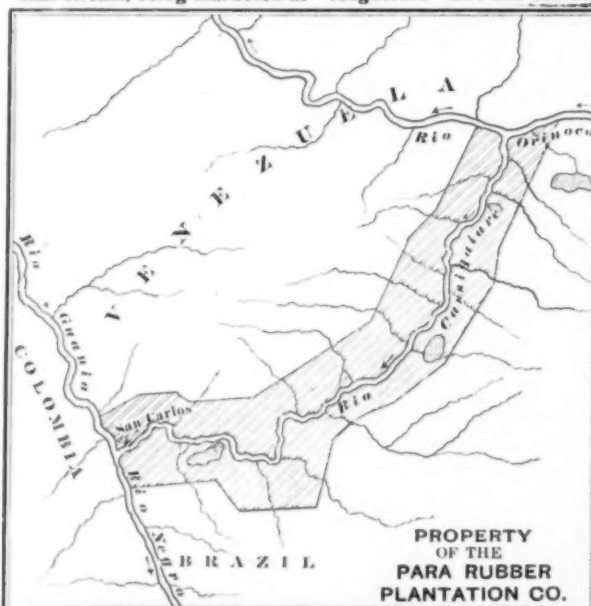
IN addition to the investment of capital in the United States in the forming of rubber plantations in Mexico and Central America, which has been reported in considerable detail in THE INDIA RUBBER WORLD during several years past, there is now evident a new branch of interest in rubber, namely, investments in enterprises for the exploitation of rubber in the tropics. Several such companies are referred to below. The largest of the various enterprises—formed to operate in Venezuela—is now mentioned in these pages for the first time.

PARA RUBBER PLANTATION CO.

THE Pará Rubber Plantation Co. has been formed for the purpose of trading in crude rubber on a large scale in Venezuela, on lines somewhat different from those any large company previously organized. The company begins with the ownership of a tract of land about 8 miles wide, lying on both sides of the Casiquiare river for its whole length of 175 miles, comprising about 1400 square miles of territory, or nearly 1,000,000 acres. The Casiquiare is a stream navigable at all seasons, connecting the Orinoco with the Rio Negro, the latter of which empties into the Amazon a few miles below the city of Manáos. The Negro is navigable up to the Casiquiare, as also is the Orinoco, with the exception of about 30 miles obstructed by cataracts above San Fernando, in Venezuela. For the present the company's property will be reached by way of Manáos, and that city will be the basis of the company's operations. It has been suggested that by means of a narrow gage railway around the falls shipments could be made on the Orinoco more economically than in the other direction, but such railway has not yet been projected. In spite of its name, the new company is to be in no sense a rubber planting enterprise.

Reports made on this territory, which have led to the organization of the company, are that it contains rubber trees in abundance of more than one species of *Hevea*, and that these trees, for the most part, have not been worked. The Casiquiare river does not overflow at any time, and the region is declared to be more healthful, for this and some

other reasons, than much of the country that has been explored for rubber in the Amazon valley. The population is mainly of Indians, who are more docile than in some other regions of Venezuela and in portions of Colombia where rubber workers have been attacked by the natives. For years some rubber from southwestern Venezuela has found its way down the Negro to Manáos, going into the markets as Pará rubber, but without any adequate statistics of the quantity. A certain amount also from the upper Orinoco has gone down that stream, being marketed as "Angostura" fine and coarse.



[The shaded portion of the map indicates the tract owned by the Pará Rubber Plantation Co.—three miles in width on one side of the Casiquiare and five miles on the other. The arrows indicate the direction of the current of the Orinoco, which discharges into the Atlantic, and of the Negro, which joins the Amazon river below the city of Manáos.]

The natives of this region have developed some degree of civilization, cultivating crops for their own use, and in places have engaged in a small way in gathering rubber. There are also some Brazilian settlers who are familiar with working in rubber, and the company purposes inducing more Brazilians, particularly Cearenses experienced in working rubber, to enter its employ. The Casiquiare district is less remote than some of the upper Amazon rubber fields to which the Cearenses go annually, besides which it is adapted for permanent residence, which is not true of districts which are overflowed every year.

It is the idea of the company that, having a rich and unworked rubber district of large extent, with many resident natives who are capable of being trained to work rubber, and with advantages attractive to Brazilian rubber workers, together with a large amount of capital and facilities for maintaining company stores, it will be able during the next crop season to begin operations extensively and to ship considerable rubber at a cost which will insure profits. One advantage that the company expects to have over some that have operated in the upper Amazon districts is that piracy of rubber will be practically impossible. The Pará company will be able to so control the approaches to the Casiquiare that neither goods can be entered nor rubber sent out without the knowledge of the company's agents, and there is no other means of communication with the outside world.

The Pará Rubber Plantation Co. was incorporated August 11, 1902, under the laws of Arizona, with \$5,000,000 capital. The officers are: John Cudahy, president of the Cudahy Packing Co., Chicago, *president*; Allen T. Haight, president Manhattan Terrace Co., New York, *vice president*; Elmer P. Martin, secretary S. K. Martin Lumber Co., Chicago, *treasurer*; F. M. Crawford, No. 52 Broadway, New York, *secretary*. The remaining directors are: J. Wesley Allison, president The Cramp Steel Co., Limited, New York; W. J. Hilands, broker, Chicago; L. B. Adams, Guaranty Savings and Loan Bank, Minneapolis; A. H. Bartle, capitalist, New York; Leslie Stavert, credit man American Linseed Oil Co., Chicago. In addition to the above, the company has an advisory board, consisting of Andre Michelin, of Michelin & Cie, the French rubber manufacturers, and the following members of the crude rubber trade at Antwerp: Robert Osterrieth (of Osterrieth & Co.), Armund Grisar (of Grisar & Marsily); Fuchs de Decker & Co., and L. C. van den Brock. Besides, Kenneth Rose, of San Carlos, Venezuela, who has resided for some years in the Spanish American states, becoming familiar with the condition of rubber trading, has been employed as South American manager for the company, with a seat on the advisory board. The company is offering its shares to the public at \$10, par value.

Venezuela is divided into thirteen states and two territories. The Casiquiare district lies in Amazonas territory, in the extreme southwestern part of the republic and bounded on the west by Colombia and on the south by Brazil. The population of the territory is estimated at about 46,000, of whom 12,000 are civilized Indians.

THE UNITED STATES RUBBER CO. ON THE ACRE.

THE action of the executive committee, favoring the acquirement of an interest by this company in the Acre concession, referred to in the last INDIA RUBBER WORLD, was confirmed at the next regular meeting of the board. There have since been no developments with regard to the matter, though correspondence has been in progress between the officials of the United States Rubber Co. and the *cessionnaires* under the Bolivian grant, Mr. Whitridge and Sir Martin Conway, who are now in Europe. From all that can be learned of the South American situation, Bolivia has no intention of yielding to the

Brazilian pretensions in the direction of annulling the concession granted to the American syndicate. Meanwhile, the Acre district has been the resort of all kind of adventurers, and it is not likely that conditions there will be favorable to business for some time to come.

AMERICAN CRUDE RUBBER CO.

THIS company was incorporated under New Jersey laws on August 29, the certificate filed with the secretary of state being signed by Owen E. Abraham and John W. McConnochie, of No. 52 Broadway, New York, and Kenneth McLaren, of New Jersey. The registered office of the company is No. 15 Exchange place, Jersey City, N. J. The two New York incorporators are connected with the law offices of Abner McKinley, a brother of the late president of the United States, who is understood to be interested in the enterprise, but thus far no information has been furnished regarding the plans of the company.

RUBBER FROM MOLLENDU.

RUBBER from this port on the Pacific has begun to reach the New York market direct, being the product of Bolivia, and particularly of certain concessions worked by capital from the United States. There are now two such companies working on a considerable scale—the Chicago-Bolivian Rubber Co., with its headquarters in Boston, and the Andes Rubber Co., with headquarters in Baltimore. During the past month rubber has been received at New York, shipped by each of the two companies named.

IN THE FRENCH CONGO.

THE Congo and Sangha Development Co., incorporated under the laws of New Jersey, and mentioned in THE INDIA RUBBER WORLD of May 1, 1902, as planning to acquire and work one of the rubber concessions in the French Congo, have postponed the beginning of work with a view to largely expanding the scope of the company. The modifications involved requiring the consideration of the French government, all the papers in the case have been submitted to the ministry of the colonies and now await its action.

IN ECUADOR.

CARL O. RETSLOFF, who is to be resident manager at Esmeraldas of the Ecuador Rubber and Development Co., lately organized at Winnebago City, Minnesota, and E. T. Crowther, assistant manager, left for Ecuador early in October, prepared to begin their work of exploiting rubber.

A TRANSACTION IN FIRE HOSE.

THE city of Springfield, Ohio, has been buying some fire hose. At a special meeting of the police and fire board, attended by the mayor, three hours were devoted to a consideration of the subject. First, bids were open from twelve rubber hose manufacturers, seven of whom were represented at the meeting by salesmen. After the reading of the bids, the salesmen retired from the room, being recalled singly to talk for ten minutes each on the merits of their hose. The subject was then deferred until the next regular meeting of the board, called at an earlier hour than usual, in order that the hose business might be concluded in one evening. The result was the purchase of 4000 feet of hose at 75 cents per foot, or \$3000. The members of the Springfield board are to be commended for devoting their time so liberally to the public service. But the cost to the rubber trade, as a whole, of having seven salaried men on the scene must be deducted from the profits of the industry as a whole, from supplying this \$3000 worth of hose, on which basis doubtless a good deal of rubber business is done without a very substantial profit.

CORNER STONE LAYING AT A RUBBER FACTORY.

THE corner stone of the new factory of the Vulcanized Rubber Co., at Morrisville, Pennsylvania, which is to supersede the plant now occupied by the company was laid with appropriate ceremonies on the afternoon of October 18, in the presence of a number of invited guests, who afterwards were entertained at a banquet by the officers of the company. At the hour named for the ceremonies, 1 o'clock, a cornet solo brought the guests and the employés of the factory together in front of a stand handsomely draped with American flags. On the stand were Messrs. Myer Dittenhoefer, president of the company; Theodore E. Studley, secretary and treasurer; George Pellinger, vice president and general manager; S. H. Dodd, a director; F. B. Gilkeson a well known attorney of Bristol, Pennsylvania, and counsel for the company; and Henry C. Pearson, editor of THE INDIA RUBBER WORLD. After the "Star Spangled Banner" had been played, President Dittenhoefer arose and said:

We are assembled here to-day to lay the corner stone of a new home of industry, and thank you for your presence, which adds grace and dignity to the occasion.

It is a little more than fifty years ago that Nelson Goodyear discovered the process of making Hard Rubber. Since that time its uses have broadened and extended, and to-day the world could hardly get along without it. The wonderful progress made in telegraphy, telephoning, and electricity, is owing greatly to the use of Hard Rubber. The arts and sciences are tributary to it.

Having settled some years ago in the borough of Morrisville, this border town of the great Keystone state, and finding that the factory occupied by us a short distance from this spot had become inadequate, the directors of the Vulcanized Rubber Co. decided upon an enlargement of the plant, and to-day, with your assistance, we lay the corner stone of this new building, which when completed will be a model plant, and will have room enough to employ a larger number of people than could be housed in the old factory. May it prove of benefit to all concerned—to the borough of Morrisville, to the people employed, and to the owners.

May the good feeling which in the past has always existed between employers and employed, continue, as in my estimation the success of any business is greatly based on a mutual feeling of harmony among those engaged in it. And now, as I have been taught to always invoke the aid of Deity before entering on any great or important undertaking, I do so now, imploring and invoking the Great Architect of the Universe to bless our work and so guide us that it may continue to be a benefit to all concerned.

Stepping down to the corner stone, Mr. Dittenhoefer said:

In this box we place a copy of the Holy Bible, a gift of Squire Wright; a copy of THE INDIA RUBBER WORLD, whose Editor is with us; copies of the New York *Herald*, the Trenton *True American*, and the Trenton *State Gazette*; an illustrated catalogue of the Vulcanized Rubber Co.'s products; a beautiful engrossed parchment containing the names of the officers and all the people employed by our company—the work of Mr. Van Buskirk, one of our old and faithful foremen; a hard rubber tablet on which is engraved the names of the officers; and samples of various products of our handicraft.

Taking this trowel, the main instrument of the builder's craft, I spread the cement which will unite this stone inseparably to our building. May this be a symbol that the Cement of Harmony will always be with us and unite us for the common weal.

Returning to the stand, President Dittenhoefer introduced the Hon. Mr. Gilkeson, who spoke for ten or fifteen minutes very eloquently. At the close of his speech the guests and officers of the company, the managers and foremen of the

factory, and the borough officers of Morrisville, entered carriages and were driven to Trenton, where, at Hildebrecht's café, a luncheon was served, the menu being as follows:

MENU		
Table Celery	Mill Pond Cocktail	Salted Nuts
Olives	Puree of Tomatoes aux Croutons	Pimolas
	Sweetbread Cutlet en Croustade	
	Petit Pois	
	Punch au Kirck	
	Egyptian Cigarettes	
	Sirloin of Beef, Braise au Celeri	
	Browned Sweet Potatoes	White Seal
	Neapolitan Ice Cream	
	Assorted Cakes	
	Fromage de Brie	
	Bents Crackers	
Café Noir		Mi Favoritis

The banquet room was tastefully decorated with candelabra, palms, and cut flowers. Covers were laid for fifty. President Dittenhoefer presided gracefully as toastmaster, his introduction in every case being most happy.

Superintendent A. M. Sawyer was the first to be introduced. In a short speech he referred to the harmony which existed between the officials of the company and their employés. He proposed the toast "The Man Behind the Guns of the Factory," referring to Vice President George Pellinger, which toast was drunk amid cheers.

Mr. M. Homan, of Paterson, the architect who drew the plans for the buildings, responded to the toast "Our Assembled Guests." He referred to the improved factory conditions that now prevail, said the employé must be regarded as more than a mere machine, and spoke of the consideration which the officials of the Vulcanized company had always shown to the rank and file of its employés.

Mr. Theodore E. Studley, of New York, secretary and treasurer of the company, proposed the toast "All Honor to the Men Who Made the Success of the Company possible." Briefly he sketched the early difficulties of the company and paid warm tributes to President Dittenhoefer and Vice President Pellinger. His remarks were punctuated with much wit.

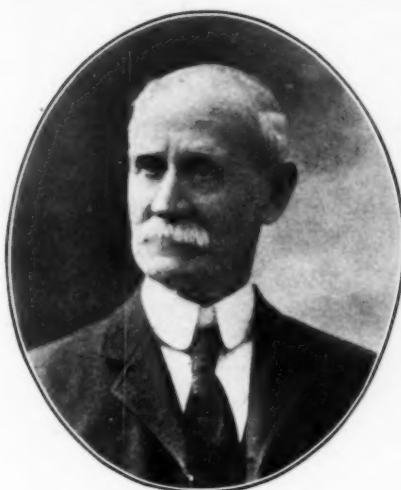
Mr. Henry C. Pearson, editor of THE INDIA RUBBER WORLD, by means of a humorous story, pointed out that the company had been born to new prosperity. He proposed the toast "The Young Men Who Comprise the Vulcanized Rubber Co."

Vice President Pellinger, "the Man from Akron," was called on and responded briefly.

Mr. C. H. Gantz, president of the Morrisville council, responded to the toast, "The Borough of Morrisville." He referred to the laying of the corner stone as the opening of the door of Morrisville commercially, and said the new factory would be a monument to the borough's progress.

Mr. Leo Lichtenstein, a salesman for the company, made a brief speech and Councilman Charles Taylor, of Morrisville, and W. Humphreys, agent there for the Pennsylvania Railroad Co., also spoke.

The favors were unique. They consisted of beautiful miniature boxes in exact imitation of guitars, mandolins, and banjos; also imitation cigars, each of which when opened revealed a tiny doll and the inscription "Now Will You be Good?"



SECRETARY STUDLEY.



PRESIDENT DITTENHOEFER.



VICE-PRESIDENT PELLINGER.

OFFICIALS OF THE VULCANIZED RUBBER CO.

The banquet closed with mutual congratulations upon the great success of the event. There were present, in addition to all the gentlemen named on the preceding page:

The burgess of Morrisville, Charles Sine, and Councilmen C. H. Gantz, R. V. Hutchinson, Margerum, Case, and Palmer; Bernard Long, Wilkesbarre, Pa.; Jacob Schmidt and Jacob Schmidt, Jr., contractors for the buildings, Wilkesbarre, Pa.; L. L. Meredith, engineer, Morrisville, Pa.; Edmund Wright, C. C. Humphreys, and William G. Howell, Morrisville; S. S. Parkinson and Councilman Charles F. Goldenbaum, of Trenton; Charles E. Worthington, Boston; George Pellingier, Jr., L. F. Dittenhoefer, James Moeser, C. S. Taylor, H. Swatz, and Marion Ullman, New York; J. Ruggaber, superintendent comb department; Oscar Beck, superintendent stock department; Fred Taylor, head bookkeeper; and the following foremen: George Jenkins, William Carmen, Joseph Tinery, George Van Buskirk, Edward Sutterly, Joseph Lester, Benjamin Peze, Charles Parsons, C. H. Young, Edward Neuman, Patrick Doherty, C. Nolan, Fred Willand.

* * *

At the conclusion of the exercises at the building, the employees of the company repaired to Mershon's Hall, Morrisville, where a banquet was served. Covers were laid for about 300. The committee in charge consisted of Charles E. Taylor, chairman; L. Z. McGannon, Joseph Pellingier, Edward Swope, Mahlon T. Moon, Elmer Jenkins, William Stradling, Thomas Nevins, Aaron Van Buskirk, Fred Cox, William Meyers and Michael Giblin. Dancing followed the lunch and the festivities continued until late in the afternoon. In the morning teams from the polishing rooms and the turners' department met at baseball, the latter winning by a score of 11 to 5.

* * *

THE new building of the Vulcanized Rubber Co. is in three sections, all of brick, two stories high, of modern mill construction. The structure nearest the railroad line, on Smith street, is 40×210 feet, with an extension 125 feet long. The central building is 40×277 feet, and the one on the north 40×263 feet. The structures are well under way, one being up to the second story line, and the others up to the window sills. The new building and the equipment will cost about \$200,000. The engines are of the Harris-Corliss type, and the drive will be a new feature in rubber mill work, being a chain drive on the same principle as the chain used on a bicycle.

SOME WANTS OF THE RUBBER TRADE.

[265] FROM a firm importing crude rubber comes a request for the name and address of some manufacturer of machines for pressing rubber.

[266] From Chicago: "Please inform us who builds rubber mixers; also, where to buy washed Pará rubber."

[267] From a Southern city: "We should like to learn of a suitable material for use in waterproofing cotton duck, with a view to the manufacture of tarpaulins."

[268] From the West: "We have an inquiry for prices on rubber return balls. Kindly inform us who makes them."

[269] From New Jersey: "Please give me the address of a dealer in reclaimed white rubber."

[270] From New England: "We wish you would kindly advise us where we can purchase two-ounce bottles for rubber cement."

[271] From Philadelphia: "Please refer us to some party making a rubber coated cork for ammonia bottles."

[272] "Will you kindly mention the address of the manufacturers of Smith's bias cutting machine, described in THE INDIA RUBBER WORLD for September?"

[274] From England: "Where can I buy thin rubber sheet, such as is used in dress shields?"

[275] From Japan: "Can you tell me how to make varnish, polish, or gloss, for India-rubber goods, or where to procure same, similar to enclosed rubber sheet?"—[The sample sent is of ordinary red rubber, which owes its gloss to the fact that it was cured on a perfectly smooth surface, potashed, and then wiped over with glycerine.]

[276] From England: "We shall esteem it a great favor if you will kindly inform us of any firm or firms in America which you know to make a specialty of the manufacture and engraving of steel molds for golf balls."

[277] From Canada: "In the British foreign office annual series, No. 2876, under the head of rubber in French Guinea, it is stated that 'the only rubber allowed to be exported would be that prepared by the Foulah method, in red filaments, which was found to be the only one which permitted the detection of resinous adulteration.' Can you tell us what the Foulah method is?"

ALLAN MAGOWAN, RUBBER SUPERINTENDENT.

ONE of the oldest superintendents and owners in the rubber business to-day is Allan Magowan, of Trenton, New Jersey, who was born in the north of Ireland, of Scotch-English stock, and came to this country when but a child. His first experience in rubber work dates back to 1850, when he was employed in the factory of the New England Car Spring Co., at Thirty-third street and Third avenue, New York. He worked there for four years and then took a position in Trenton in a small factory which had formerly been owned by the pioneer rubber manufacturer of Trenton—Jonathan H. Green, "the reformed gambler."* Green having failed to make his rubber venture profitable, the factory was purchased by Garret Schenck and Hiram P. Dunbar, who started in the manufacture of mechanical rubber goods, the late veteran superintendent, Henry Joslin, being in charge. Mr. Magowan was then an active and capable young man and a great admirer of Abraham Lincoln, and a prominent member of one of the *ante-bellum* clubs known as the "Wideawakes."

In 1859 Mr. Magowan went to Richmond, Virginia, to work for John J. Fields, the founder of the New Jersey Car Spring and Rubber Co., who had sent machinery there and set it up in the old Tredegar Iron Works for the manufacture of patent rubber carsprings. Jacob D. Joslin was superintendent of this Richmond factory. Mr. Magowan worked until the outbreak of the civil war put a stop to the supply of rubber and other materials, and Mr. Fields and Mr. Joslin went north to avoid being drafted into the Confederate army. Mr. Magowan, however, having an invalid wife, was not able to leave and was impressed by the Confederate government to make insulated wire for torpedoes and field work. The rubber covering was made largely of old carsprings ground fine, and boiled up in spirits of turpentine. A great many army blankets were also made for the government of this same reclaimed rubber. As Mr. Magowan had a couple of braiding machines he was able to make several miles of insulated wire, which was used in signaling during battles. Dr. Morris, who had charge of the Southern telegraph, also induced Mr. Magowan to build a machine for drawing wire, by giving him a competent machinist, and with a force of ten slaves he made a great deal of it, the long pieces being used for telegraph work and short pieces for rivets.

In spite of the fact that Mr. Magowan was employed by the Confederate government he had never been asked to take an oath of allegiance to it, nor had he been questioned as to his sympathies. As he was at heart a strong Union man and working because he was obliged to, he could not forbear to strike one blow for the Union, and he therefore punctured with a sharp nail every piece of torpedo fuse that passed through his hands. As this fuse was covered with Gutta-percha the insulation was thus ruined and the torpedoes would never have exploded had the electric current been turned through the wire. After the battle of Antietam Mr. Magowan with his invalid wife was able to get a letter to the secretary

of war, who gave him a permit to go north under a flag of truce during an exchange of prisoners. After reaching Philadelphia his wife died and he took her to Trenton for burial. He then went into a factory there and was employed at making swords.

In 1865 Bramble & Sinclair had a small factory in Paterson, New Jersey, of which Henry Josselyn was the superintendent, where they made mechanical rubber goods. Here Mr. Magowan worked for a short time, when Mr. J. J. Fields having moved his machinery from Richmond, Virginia, to Jersey City, he accepted a position with him. In 1867 he accepted a position as superintendent of the Boston Car Spring Co., owned by George and Hiram P. Dunbar, the factory being at Roxbury, Mass. The lines of goods manufactured were carsprings and specialties in mechanical rubber goods. Two years later he accepted the position of superintendent of the Whitehead Brothers Rubber Co. in Trenton, remaining with them until 1880, when the Trenton Rubber Co. was incorporated, Frank A. Magowan, Spencer M. Alpaugh, Gardner Forman, and Allen Magowan being equal owners. A few years later the same company started the Empire Rubber Co. for the manufacture of rubber carriage cloth. They afterwards bought the factory of the Star Rubber Co. and moved the machinery of the Empire works there. Later the same four purchased the plant of the Hamilton Rubber Co. and started there the Eastern Rubber Co.

This was the high tide of Allan Magowan's prosperity. Had he sold his interests at this time he would probably have realized half a million dollars. The financial troubles of his son, Frank A. Magowan, however, and the wish to assist him as much as possible, induced Mr. Magowan to sacrifice all of his holdings together with \$50,000 worth of life insurance. Again a poor man, Mr. Magowan with two of his sons, Joseph H. Magowan and John T. Magowan, built a small plant and incorporated the Modern Rubber Manufacturing Co., the business being the manufacture of rubber matting and small mold work. This factory was burned September



ALLAN MAGOWAN

ber 24, 1902, and is now being rapidly rebuilt.

Personally, Mr. Magowan is an extremely quiet, modest, old-fashioned gentleman, of quiet tastes and unimpeachable integrity. He has the respect of all who know him and the cordial hope that the reconstructed Modern Rubber company will be all that he may wish it to be.

ANOTHER MISTAKE CORRECTED.

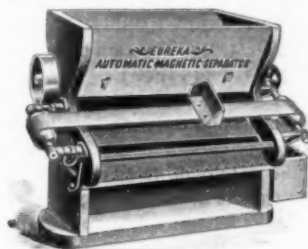
THE able Portland (Maine) *Press* says, in its issue of October 10: "It has long been the impression that the raw rubber of Pará was superior in quality to all kinds of African rubber and it has been asserted that this superiority was due to the finer quality of the milk of the *Hevea* from which most of the Brazilian rubber is extracted. The *Landolphia* is the vine from which all the rubber obtained in the Congo Free State is taken. It is now certain, however, that this supposition is erroneous." At the same rate of progress in mastering the subject of rubber and its sources, the editor of the *Press* may be able to announce next year that the best of all rubber may be obtained from the common house plant known as a "rubber tree."

* Green, after his reform, wrote a book, "An Exposure of the Arts and Mises of Gambling," which was published in Cincinnati in 1843, as a warning to others.

NEW GOODS AND SPECIALTIES IN RUBBER.

"EUREKA" AUTOMATIC MAGNETIC SEPARATOR.

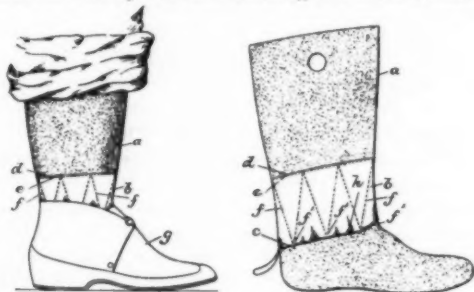
ONE of the first difficulties the pioneer manufacturers of reclaimed rubber experienced was that of removing iron from the reclaimed stock. This iron appeared in the form of nails, metal shanks, rivets, etc. After the waste stock has been cracked and ground as finely as necessary a careful examination of it will discover many particles of this



metal. Indeed, often there are large pieces which remain in the stock and show on the surface of the calendared sheet, many times destroying hundreds of dollars' worth of surface goods, and when used for wire covering destroying the insulating qualities of the rubber. Perhaps the best arrangement for removing iron or steel while the reclaimed rubber is in process of manufacture, is the machine shown in the accompanying illustration. This machine is very simple, consisting of a hopper, into which the ground rubber is fed and through which it flows over a magnetized surface to which the iron at once adheres, while the rubber, not being affected, goes on down to a bin below. Across the surface of this magnetic field runs a leather belt wiper which removes the adhering particles of metal, carrying them away to a waste box on the side. The machine is wholly automatic and will last almost indefinitely. It requires very little care, cleans itself, and is not costly. The magnetic tract is charged by magnets made specially for this use, each one tested to lift 20 to 25 pounds. The poles are covered with special iron, giving the strongest charged magnetic surface possible to obtain. The machines are made in thirteen sizes, the prices running from \$55 to \$400 each. These magnetic separators are in use in many of the largest rubber reclaiming factories in the United States and abroad. [The S. Howes Co., Silver Creek, New York.]

IMPROVEMENT IN FELT BOOTS.

CHARLES E. SEIBERT, of Baltimore, Maryland, has obtained a patent for a leather band to surround the ankle of the felt boot worn inside an arctic or a rubber boot, to overcome the drawback to this style of foot covering which sometimes arises



from the liability of the felt to become damp from perspiration or otherwise, and thus get spongy and break, or quickly wear out at the ankle, where it is continually flexed by the movement of walking. There is also a tendency of the felt to abrade the upper edge of the arctic. The cut on the right shows a

felt boot made according to this patent, and the cut on the left shows the same upon the foot and inside an arctic. The ankle band *b*, of leather, extends entirely around the boot in the position shown. It is sewn to the felt by the rows of stitching *e* and *f*, but not at the lower edge, which is free to "buckle," as shown by the shaded portion *A*.

NEW "SERVICE" HEEL.

A FEATURE which is designed to add wearing quality to the rubber shoe at a point which it gets the hardest service is the



new heel, added only to certain of the first quality goods manufactured by the Boston Rubber Shoe Co. This new feature is termed the "service heel" and is really an extra

quality heel made with a rolled edge and brought up on the rear as a further protection. This is added to the regular "Storm Slipper," the "Norword" and the "Medium Over" styles.

THE "LITTLE GIANT" HOUSEHOLD PUMP.

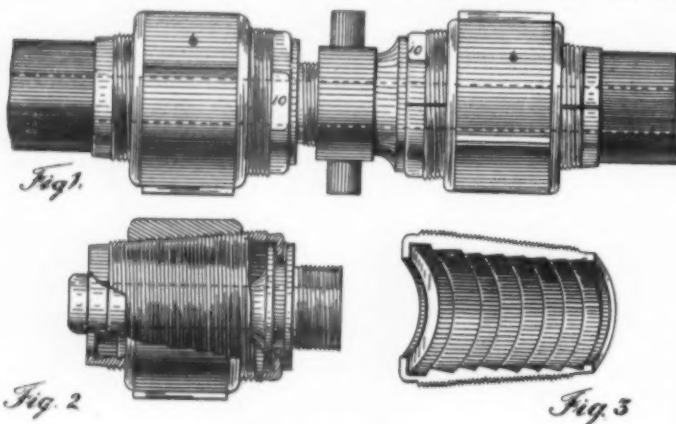
THE pump illustrated here with scarcely needs special description, as the cuts tell the whole story. It may be well, however, to refer to some of its advantages. The cup weighs 5 ounces, is made of rubber, with a metal shield which extends



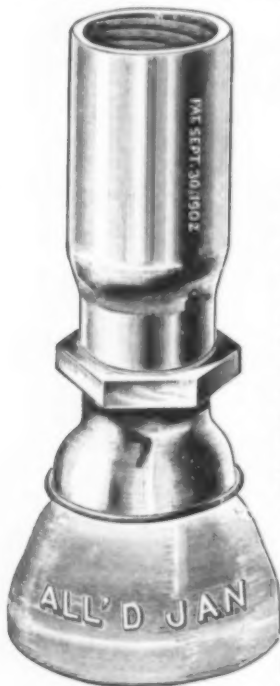
to within one-half inch of the bottom of the cup, thus allowing the latter to adjust itself to the opening. It is both a force pump and a lift pump, and has great power either way. It has an extra adjustable rubber washer made to fit pipes from $\frac{3}{4}$ inches to 2 inches. As the barrel of the pump is 7 inches long it gives a plunger stroke of $6\frac{1}{2}$ inches. The attachments are easily and quickly put on or taken off. The weight of the pump is 16 ounces. It will remove the most obstinate obstruction, whether it be one or 20 feet from the waste outlet. [The Mulconroy Co., Incorporated, Philadelphia, Pennsylvania, sole agents for the United States.]

BOWERS'S HOSE COUPLING RETAINER.

It is well known that wherever steam hose is used under heavy pressure, the ordinary expanded ring coupling is not sufficient to keep it from blowing out. Of course it is perfectly possible to secure the hose and the coupling together by a



variety of cumbersome devices, but a neat compact fastening device has not, to the writer's knowledge, been produced prior to the invention of the Bowers retainer. In the illustrations shown in connection with this description, Fig. 2 gives a detailed view of one section of the coupling, while Fig. 3 shows a perspective view of the retaining thimble partly broken away. In other words, the coupling is a combination of a grooved collar with a tubular extension that fits into the end of the hose and a tapering outside sectional thimble, screw threaded, which surrounds the end of the hose, and is fitted over the tubular extension of the coupling. The outer ends of the thimble sections are flanged inwardly so as to engage with the grooves of the coupling collar with a tightening nut which screws on to the thimble. The inventor and patentee of this coupling is W. F. Bowers, president of the Bowers Rubber Co., San Francisco, California.



ANKLE JOINT CRUTCH TIPS.

ONE great trouble with the ordinary crutch tip has been that the motion of the crutch twisted the rubber, causing it to wear out quickly, and further than this, most of the bearing came on one side of the base of the tip, rather than on the whole of it. The Ankle Joint Tip is designed to overcome this, and does so most effectively. This is accomplished by the use of a ball and socket joint placed just above the rubber. The use of this joint makes the walking on crutches much easier and safer and the tip has already had a large sale. It is furnished in two styles, hollow and solid. These goods are protected by a number of patents. [Elastic Tip Co., No. 370 Atlantic avenue, Boston, Massachusetts.]

NEW TRADE PUBLICATIONS.

THE B. F. GOODRICH CO. (Akron Rubber Works, Akron, Ohio) issue a Catalogue of Goodrich Solid Tires and Goodrich Side Wire Tires, describing the tires and the method of applying them to vehicle wheels. It contains illustrations of tire sections which are made in width from $\frac{3}{4}$ inch to 4 inches, the solid tires being of the two wire type for sizes of 3 inches and three wires for larger sizes. The catalogue also illustrates in detail the mechanical appliances for putting on these two types of tires and also sectional views of the standard steel channels described in THE INDIA RUBBER WORLD for September 1, 1892 (page 377). The catalogue also includes prices. [$5\frac{1}{4}'' \times 8\frac{3}{4}''$ 40 pages.]

TYER RUBBER CO. (Andover, Massachusetts) issue a new catalogue of "Tyrian Rubber Goods," including druggists' sundries and stationers' and miscellaneous goods, with prices. The catalogue is liberally illustrated with photographic views of the leading articles listed, the pictures generally being colored to indicate the actual appearance of the rubber. There are also several half tone views of Tyer factory interiors. This

is one of the largest druggists' sundries catalogues issued, and a comparison of it with the first catalogue ever issued by the Tyer company strikingly illustrates the development made by this important establishment. [$10'' \times 7\frac{1}{2}''$ 112 pages.]

THE HOOD RUBBER CO. recently brought out an exceedingly striking hanger, which was distributed to their customers throughout the country, and has attracted much attention. It is printed in ten colors and shows a huge ocean steamer in the background, and the tender of a pilot boat in the foreground. An inquiring soul aboard the steamer asks the lusty pilot where he secured his rubber boots, and the latter, calling back through a megaphone, gives the single word "HOOD."

FABRIC FIRE HOSE CO. (New York), issue a pamphlet with the title "When Buying Fire Hose," which describes their method of treating the cotton fabrics used with a mixture of melted wax and gum, and also their patent process of "balance weaving," after which are quotations from commendation letters from fire chiefs in many cities, and a list of towns and cities in which their fire hose has been in use from five to twenty years. [$7'' \times 6''$ 32 pages.]

INDIANA RUBBER AND INSULATED WIRE CO. (Jonesboro, Indiana), issue a new catalogue of insulated wires and cables, manufactured under their "Paranite" and "Peerless" brands. They make low tension and high tension wires, telegraph and telephone wires and cables, submarine cables, etc. The catalogue ends with several pages of "Useful Tables." [$4\frac{1}{4}'' \times 7\frac{1}{4}''$ 48 pages.]

VOUGHT & WILLIAMS (Nos. 363-367 Greenwich street, New York) who have been mentioned before in THE INDIA RUBBER WORLD as extensive dealers in rubber horseshoe pads, present in their Catalogue of Horse Shoers' and Blacksmiths' Supplies no less than 44 illustrations of different styles and types of horseshoe pads. These do not cover their whole stock in this line, however, and they advise THE INDIA RUBBER WORLD that since the issue of their catalogue they have had submitted to them some six or eight new styles of pads. Another line in connection with rubber which the firm have taken on, in recent years, is solid rubber vehicle tires, of which they keep in stock a number of sizes, together with tools for applying rubber tires, and an assortment of steel channels for such tires. [$5\frac{1}{2}'' \times 8''$ 381 pages.]

RECENT RUBBER PATENTS.

THE UNITED STATES PATENT RECORD.

ISSUED SEPTEMBER 2, 1902.

NO. 708,003. Process of producing a composition of matter to be used as a substitute for rubber. Otto A. Bailer, Philadelphia, Pennsylvania.

708,033. Detachable cushion heel. Walter S. Estey, Webster, Massachusetts.

708,225. Elastic tire and process of manufacturing same. Frank E. Hall, Quincy, Massachusetts.

708,317. Shield for personal wear. Lillie H. Catzen, Baltimore, Maryland.

708,482. Pneumatic tire. Thomas B. Jeffery, Kenosha, Wisconsin.

708,483. Playing ball. Eleazer Kempshall, Boston, Massachusetts.

708,484. Playing ball. Eleazer Kempshall, Boston, Massachusetts.

ISSUED SEPTEMBER 9, 1902.

708,547. Overshoe. Henry A. Hamilton and Frank H. Crawford, Emlenton, Pennsylvania.

708,607. Horseshoe pad. Frank W. Wood and Mercer R. MacPherson, Chelsea, Massachusetts.

708,823. Process of preparing and treating rubber coated materials. Johann Minder, Piesteritz, Germany, assignor to Oxylin Werke Actiengesellschaft Piesteritz.

708,864. Resilient tire for vehicle wheels. William E. Carmont, Kingston-upon-Thames, England.

708,952. Pneumatic tire and process of manufacturing same. John W. Blodgett, Chicago, Illinois, assignor, by direct and mesne assignments, to N. Tire Co., Chicago.

708,967. Machine for smoothing rubber vehicle tires. Stephen S. Miller and Lee E. Clough, Akron, Ohio.

ISSUED SEPTEMBER 16, 1902.

708,983. Overshoe for horses. John Bartlett, Brooklyn, New York.

709,021. Bicycle tire. Henry Du Bois Lefferts, New Brunswick, New Jersey.

709,272. Stamp affixer. Henry D. Long and James Jackson, Philadelphia, Pennsylvania.

709,280. Pneumatic tire. Irvin Tennant, Springfield, Ohio.

709,324. Puncture proof inflatable wheel. Alexander Honrath, Kiowa, Indian Territory.

709,411. Playing ball. Eleazer Kempshall, Boston, Massachusetts.

709,412. Playing ball. Eleazer Kempshall, Boston, Massachusetts.

ISSUED SEPTEMBER 23, 1902.

709,483. Tire and fastener for vehicle wheels. Jacques C. Haines, Chicago, Illinois, assignor of two-thirds to William E. Huber and Chester Haines, Chicago.

ISSUED SEPTEMBER 30, 1902.

709,930. Pneumatic saddle pad. Henry R. Rensman, Chicago, Illinois, assignor of one-half to Lucas Kuczkowski, Chicago.

709,935. Dress shield. Alexander T. Stevenson, Bay City, Michigan.

709,959. Vehicle tire. Frank P. Brining, Westgrove, Pennsylvania.

709,977. Pneumatic Cushion. John H. Finney, Chicago, Illinois, assignor of one-half to David G. Gilmore, Chicago.

709,993. Article of manufacture having an elastic portion and a securing portion. Joseph G. Moomy, Erie, Pennsylvania.

710,073. Elastic tip. Philip W. Pratt, Boston, and Rolon E. Foster, Revere, assignors to Daniel S. Pratt, Brookline, Massachusetts.

710,090. Toy. David J. Wilson, Washington, D. C., assignor to Herrell Espey Manufacturing Co., Washington.

710,114. Nipple. Edward E. Menges, New Haven, Connecticut, assignor to the Seamless Rubber Co.

710,135. Rubber tire setting machine. John C. Blake, Toledo, Ohio, assignor to The Indiana Rubber and Insulated Wire Co., Jonesboro, Indiana.

710,198. Manufacture of playing balls, Eleazer Kempshall, Boston, Massachusetts.

710,274. Tire for wheels. Everett Horton, Bristol, Connecticut.

710,306. Rubber dam holder. George W. Todd, Elmwood, Nebraska, assignor of one-third to Hans Peter Jensen, Omaha.

710,368. Manufacture of playing balls. Francis H. Richards, Hartford, Connecticut, assignor to The Kempshall Manufacturing Co.

[NOTE.—Printed copies of specifications of United States patents may be ordered from THE INDIA RUBBER WORLD offices at 10 cents each, postpaid.]

THE BRITISH PATENT RECORD.

APPLICATIONS—1902.

16,655. Henry Richardson, Birmingham. Pneumatic tires. July 28.

16,660. Edward Bell Raper, York. Patching material for pneumatic tire covers. July 28.

16,762. William Park, Jr., Musselburgh, Scotland. Golf ball. July 29.

16,814. William Higgins, John Daniel Hanbury, and Charles Stanley Gardner, 180, Fleet street, London. Process of treating India-rubber. July 29.

16,865. Samuel Worsley, Buxton. Shields for the prevention of pneumatic tire punctures. July 30.

16,868. William Steane and Charles Lee, Leamington Spa. Rubber boot heel. July 30.

17,014. Richard Russell Gubbins, 95, Pelton road, East Greenwich, London. Treatment of India-rubber waste, and rolling and cutting machines for the same. August 1.

* 17,181. Eleazer Kempshall, 45, Southampton buildings, Chancery lane, London. Playing balls. August 1.

17,211. Lewis Johnstone, Birkbeck Bank chambers, Southampton buildings, Chancery lane, London. Pneumatic tire covers. August 5.

17,252. Emil Theodor Braarup, 53, Chancery lane, London. Means of inflating India-rubber balloons. August 5.

17,253. Friedrich Eckert, 53, Chancery lane, London. Waterproof acid-resisting and electrically non-conducting glove. August 5.

17,254. William Frederick Williams, 53, Chancery lane, London. Means of securing elastic tires. August 5.

17,300. S. T. Ealing-Still, 5, Lord street, Liverpool. Soft vulcanite bath sponge. August 5.

17,301. Charles Thomas Kingzett, 24, Southampton buildings, Chancery lane, London. Improvements in golf balls, and in their manufacture. August 6.

17,398. Henri Falconnet and Maurice Perodeaud, 6, Lord street, Liverpool. Pneumatic tires. August 7.

17,431. Edward Blundell, 4, High street, Wem, Salop. Liquid cement for patching tires, insulating electric wires, and the like. August 8.

17,450. Herbert Walmsley, Blackburn. Rubber heel for boots and shoes. August 8.

17,549. Edward Henry Seddon, Manchester. Pneumatic tires. August 11.

17,550. Robert Drysdale, Edinburgh. "The Pneumatic" golf ball. August 11.

17,601. John Orrell, Liverpool. Pneumatic tires. August 11.

17,637. Alexander Cockburn, Glasgow. Improvements in vulcanizing rubber boots or shoes. August 12.

17,638. John Cockburn, Glasgow. Improvements in water bottles, beds, cushions and the like. August 12.

17,639. John Cockburn, Glasgow. Improvements in water bottles, cushions, beds, and the like. August 12.

17,655. William Park, Jr., Musselburgh. Golf ball. August 12.

* 17,734. Reginald Haddan, 18, Buckingham street, Strand, London. Tires for wheels. [Richard Allen Kent, United States]. August 12.

17,856. William Henry Josiah White, 2, Marnock road, Crofton road, Brockley, London. Means for preventing punctures in pneumatic tires. August 14.

17,939. Thomas Crompton Redfern, Manchester. Pneumatic tires for cycles and motors. August 15.

17,941. John Cockburn, Glasgow. Pneumatic tire covers. August 15.

18,012. William Saunders, Lochwinnoch, Renfrewshire. Substance for making pneumatic tires puncture proof. August 16.

18,135. Christian Hamilton Gray and Thomas Sloper, 111, Hatton garden, London. Improvements relating to rubbered thread or cable. August 18.

18,217. James Harold Barry, 10, Basinghall street, London. Pneumatic tires for motor cars. August 19.

18,218. Christian Hamilton Gray and Thomas Sloper, 111, Hatton garden, London. Improvements relating to apparatus for the manufacture of rubbered threads. August 19.

18,314. Thomas Harrison Lambert, Christopher Norris Baker, and James Rivers Sherman, 38, Chancery lane, London. Golf balls. August 20.

18,382. George Blackburn & Sons, Limited, and Aubrey Bayly Spring, 111, Hatton garden, London. Improvements in seamless hose and in machines therefor. August 21.

18,395. Frederick John Tregoning, 6, Oriol road, South Hackney, Lon-

- don. Means for preventing the puncturing of pneumatic tires. August 21.
- 18,408. Hugh Veysey, Palatine Cottage, Stoke Newington road, London. Cycle tire puncture preventer. August 21.
- 18,457. Alfred Joseph Thackray, Birmingham. Improvements in elastic boots. August 22.
- 18,462. Earnest Walter Weight, Bristol. Method of attaching pneumatic or other tires to wheel rims. August 22.
- 18,489. Daniel Cunningham, 33, Cannon street, London. Improved puncture proof band for pneumatic tires. August 22.
- 18,490. Willie Judson Stevens, 33, Cannon street, London. Improvements in air compressors. August 22.
- *18,505. Eleazer Kempshall, 45, Southampton buildings, Chancery lane, London. Playing balls. August 22.
- 18,515. Ernest Compton Crimp, London and South Western Bank, Limited, Hampstead, London. Pneumatic golf ball. August 23.
- *18,588. Eleazer Kempshall, 45, Southampton buildings, Chancery lane, London. Improvements in golf balls. (Date of application in United States May 28, 1902.) August 23.
- *18,589. Eleazer Kempshall, 45, Southampton buildings, Chancery lane, London. Improvements in golf balls. (Date of application in United States, June 14, 1902.) August 23.

PATENTS GRANTED.—1902.

[Complete specifications have been printed of the following patents, since our last report, the numbers and dates given relating to the original applications, noted already in THE INDIA RUBBER WORLD.]

- 7,179. Tires. Evans-Jackson, J. E., 19, Holborn viaduct, London. April 4, 1901.
- *7,205. Tires. Giddeon, W. R., Knoxville, Tennessee, United States. April 6, 1901.
- 7,381. Tires. Cauziani, E., 84, Lombard street, London. April 10, 1901.
- 7,782. Foot coverings. Buist, M. J., Bournemouth. April 16.
- 8,009. Exercising apparatus. Fagan, B. J., 5, Green street, Leicester square, London. April 18.
- 8,013. Air tubes for pneumatic tires. Collier, A. T., "Gonvena," St. Albans, Hertfordshire. April 18.
- *8,069. Golf balls. Saunders, A. T., Akron, Ohio. April 19.
- 8,388. Rubber tires for vehicle wheels. Williams, W. F., 4, Denman street, London, W. April 23.
- 8,624. Readily detachable rubber tire. Brintell, A. H., and Sawyer, E. L., Toronto, Ontario. April 26.
- 8,728. Painting golf and other balls. W. T. Henley's Telegraph Works Co., and Sutton, G., 27, Martins lane, Cannon street, London, E. C., and Hatton, R. J., 50, Carnarvon road, Stratford, E. April 27.
- *8,897. Pneumatic tire. Imray, O., Birkbeck Bank chambers, Southampton buildings, Chancery lane, London. [Wilcox, F. A., and Palmer, T. R., both of Erie, Pennsylvania, United States.] April 30.
- *9,101. Spring and rubber tires. O'Meara, D. H., Worcester, Massachusetts, United States. May 2.
- *9,103. Spring and rubber tires. O'Meara, D. H., Worcester, Massachusetts, United States. May 2.

THE GERMAN PATENT RECORD.

PATENTS GRANTED—1902.

- 135,034. Bandage of Caoutchouc or similar material for aiding and strengthening weak muscles. Dr. John Kean, Chicago, United States. Sept. 3.
- 135,054. Process for regenerating Caoutchouc parings. Otto Haltenhoff, Hanover. Sept. 3.
- 135,311. Elastic tire, with metallic protecting shield. Mary Holakubek, Vienna, Austria. Sept. 3.
- 135,585. Elastic tire. Thomas Gare, New Brighton, England. Sept. 10.
- 135,586. Pneumatic tire, combined with self-inflating device. The Self-inflating Tyre Co., Limited, London, England. Sept. 10.
- 135,587. Pneumatic cushion for tires, seats, etc., with individual air cells. Ernest Germain, Nancy, France. Sept. 10.
- 135,588. Process for the manufacture of puncture proof insertions for tires. E. C. Boehnke, Königsberg. Sept. 10.
- 135,589. Inner tubes for pneumatic tires. Société Falconnet, Perodéaud & Cie, Choisy-le Roi, France. Sept. 10.
- 135,590. Elastic tires for automobiles and other vehicles. Theodore Deluyck, Brussels, Belgium. Sept. 10.
- 135,791. Pneumatic tire combined with an inner tube strengthened

within by elastic rings. Jean Paul Le Grand and Narcisse Chéneau, Levallois-Perret (Seine), France. Sept. 17.

- 135,792. Hollow rubber tire with stiffening rings within. *Same.* Sept. 17.
- 135,793. Hollow rubber tire with stiffening rings within. [Addition to Patent 135,792]. *Same.* Sept. 17.
- 135,903. Appliance for the manufacture of rubber shoes. Henry James Doughty, Providence, United States. Sept. 17.
- 136,360. Hollow rubber tire with interwoven lacing device. William Frederic Williams, London, England. Sept. 24.
- 136,361. An inner tube, consisting of several layers of rubber, for pneumatic tires. Arthur Thomas Collier, St. Albans, Edgar Oliver Goss, and Arnold Elworthy Williams, London, England. Sept. 24.
- 136,428. Elastic narcotizing mask. Dr. Hermann Nieriker, Zurich, Switzerland. Sept. 24.

PATENTS WITH MODELS FILED.

- 181,999. Nose douche with separate nozzles for each nostril. Carl Lippert, Wasserberg. Sept. 3.
- 182,042. Protecting bag to prevent children from lying wet, the opening of which is supplied with two overlapping flaps. Charlotte Schneider, Leipsic. Sept. 3.
- 182,159. Hygienic apparatus to enable men to urinate without leaving the bed. Hermann Oscar Schieblich, Dresden. Sept. 3.
- 182,517. Hose supporter, consisting of an India-rubber girdle with opposing hooks on each end. Richard Apel, Leipsic. Sept. 10.
- 182,576. Protecting shield for pneumatic tires, consisting of alternate layers of rubber and woven materials, inserted in outer tube. Koch and Palm, Elberfeld. Sept. 10.
- 182,617. Bandage for rupture of the navel and rupture of the *linea alba*, consisting of one piece of woven rubber cloth with circular arrangement of the rubber threads. Schniewind and Schmidt, Elberfeld. Sept. 17.
- 182,821. Vulcanizing appliance with interchangeable frames. Philip Penin Gummiwaaren-Fabrik A.-G., Leipsic. Sept. 17.
- 182,638. Protecting shield for pneumatic tires, consisting of alternate layers of elastic and textile stuffs, arranged in groups. Koch and Palm, Elberfeld. Sept. 17.

APPLICATIONS.

- C 10,490. Pneumatic tire, combined with a protecting surface composed of metal segments. Bernard Hippolyte Chameroy, Le Bésinet, France. Sept. 17.
- B 29,495. Process for vulcanizing rubber and articles made of Caoutchouc without heat. Friederich Boegel, Altötting. Sept. 17.
- H 17,740. Elastic thorax band. Dr. Carl Hütlín, Freiburg. Sept. 17.
- B 4,425. Process for making sponges of Caoutchouc. Vereinigte-Gummiwaaren-Fabriken, Harburg-Wien, Harburg. Sept. 24.

IKELEMBIA RUBBER.

A LETTER from a German factory to THE INDIA RUBBER WORLD says: "We have been buying some Accalamba rubber, and as it is new to us there has been a dispute among the officers of our crude rubber department about the source of this grade. As we are aware that this rubber is known in the United States, we have no doubt that you can give us some information about it."

The rubber referred to evidently is that produced on the concession of the Société Anonyme "L'Ikelemba," a Brussels company, on the river Ikelemba, a tributary of the Congo, the name of which river is variously spelled. The rubber is of the Lopori class. A broker in New York reports: "Lopori used to be known as the best white grade of the upper Congo, but it has degenerated so that the name Lopori now covers a great many different grades and qualities of strip and ball, so that the importers, to have their customers understand which is the cement quality, call it 'Ikelemba ball' and 'Ikelemba strip.' The shrinkage on this grade of rubber is said to be less than on any other coming from the upper Congo."

The Ikelemba company's rubber is consigned to M. S. Cois, at Antwerp, where it is offered at the regular inscription sales and thus finds its way into consumption.

PROGRESS OF RUBBER PLANTING.

PROFITS FROM A RUBBER PLANTATION.

THE INDIA RUBBER WORLD is often in receipt of inquiries regarding actual results attained in rubber culture, as a basis for estimating possible profits. The answer that must be made in all cases is that none of the extensive plantations thus far formed on a commercial scale are yet old enough to have become productive, but that the planters have been induced to embark in the business by what has been observed of the rate of growth and production of a few trees at a place, in many localities, and under varying conditions. Mention has been made more than once in THE INDIA RUBBER WORLD of a rubber plantation in the state of Chiapas, Mexico, from which shipments of rubber have actually been made. About thirteen years ago a Mexican planter set out a number of rubber trees (*Castilloa elastica*) as a shade for cacao, which grew so rapidly that in time the cacao was practically starved out, and of those trees some 5000 are now standing, in a vigorous condition. A few years ago Mr. O. H. Harrison, engaged in coffee planting in Chiapas, bought this property, including adjacent lands containing wild rubber trees, for \$12,000, Mexican. Within eight months he had sold in London enough rubber from the wild and cultivated trees to pay the purchase price for the property. This formed the basis for La Zacualpa rubber plantation. A like amount of rubber has been sold from the property each year since, and more land has been purchased, the cost of the whole having been met by the proceeds of the rubber sold. During this time there has been no outlay for labor in caring for the cultivated trees, beyond the collection of rubber. The land having been paid for, the proceeds of rubber sales will be devoted to dividends on La Zacualpa shares. Mr. Harrison reports that these trees yield an average of at least 2 pounds of rubber a year—tapped once—and is convinced that a good profit could be made with a yield of half as much, which would give from 200 to 300 pounds of rubber per acre, according to the number of trees. The new planting on La Zacualpa plantation has been done with seeds from the productive trees referred to, so that no doubt can exist as to the variety that is being planted.

PLANTING "CEARA RUBBER" IN NICARAGUA.

LA Victoria Rubber Plantation has been formed at La Paz, Nicaragua, for the cultivation on a considerable scale of the Ceará rubber tree (*Manihot Glaziovii*). The location is on the Pacific slope, where the rainfall is slight as compared with that in eastern Nicaragua, and in other respects the conditions resemble those of the Brazilian state of Ceará, the native *habitat* of this species of rubber. La Paz is on the railway extending from Grenada, on Lake Nicaragua, through the city of Managua to the Pacific coast, and is favorably situated for trade and transportation. This is a private enterprise, owned by George Adler, who for a number of years has given close study to the different species of rubber. Mr. Adler is now in Nicaragua. The plantation manager is Fredrico Wagner. Alfred C. Adler, of Waltham, Massachusetts, is also interested in the plantation. About 300 acres have been planted to date, and with such results in the growth of the trees that the work is to be extended.

ILLINOIS COFFEE AND RUBBER CO.

[Plantation "La Flor del Istmo," state of Oaxaca, Mexico. Office: No. 135 Adams street, Chicago, Illinois.]

INCORPORATED December 31, 1900, under Illinois laws; cap-

ital, \$50,000, paid in cash. Organized to develop 5000 acres—part of the "hacienda de Santa Maria Chimalapa," owned formerly by Duplan Brothers—near the National Tehuantepec railway. It is planned to cultivate coffee, rubber, and other tropical products. For development purposes the estate has been deeded to the Chicago Title and Trust Co., to secure the issue of 5000 profit sharing certificates, 1000 of which are held by the Illinois Coffee and Rubber Co. and the others offered for sale on the instalment payment plan. The trust period is 25 years, after which the plantation may be sold for the benefit of the shareholders, or continued if four-fifths of the latter should so desire. Officers: *Frederick H. Herhold*, chair manufacturer, president; *Edwin M. Kenyon*, manufacturer wooden pulleys, vice president; *William H. Heuer*, a former bank teller, treasurer; *Seth Riford*, real estate, secretary—all of Chicago.

LA LUISA PLANTATION ASSOCIATION.

[Plantation "La Luisa," Tezonapa, state of Vera Cruz, Mexico. Office: No. 504 Great Northern building, Chicago, Illinois.]

INCORPORATED February, 1902, under Illinois laws, to plant coffee, rubber, and other tropical crops. The plantation comprises 3250 acres, and 3000 development certificates have been offered for sale on the instalment payment plan. The officers are: A. L. Everit, president; William C. Heinemann, vice president and treasurer; T. M. Kimball, secretary—all of Chicago. The plantation manager is E. O. Darley. The trustee and registrar company is the United States and Mexican Trust Co., with \$2,500,000 capital and offices in the United States, Mexico, and London.

RUBBER PLANTING IN THE FAR EAST.

SOME very definite details of the extent of rubber planting in Negri Sembilan, one of the Federated Malay States, appear in the annual report for 1901 of the Planters' Association of that state. Of Pará rubber the report says: "This appears likely to be the salvation of the coffee planter. On most estates it will be found planted through the coffee, to which it appears to do very little damage." Members of the association are also planting more "rambong" rubber (*Ficus elastica*) than formerly, but with what results no one cares to prophesy. "At present so far as is known the rubber is of a superior quality, but tapping appears difficult in the case of young trees." Returns from twenty-one estates represented in the Negri Sembilan Planters' Association are presented, from which is derived the following summary:

	Acre.
Planted to coffee only.....	650
Coffee, planted through with Pará rubber.....	2,852
Coffee, with <i>Ficus elastica</i>	410
Coffee, with Pará rubber and cocoanuts.....	250
Coffee, with cocoanuts.....	190
Pará rubber alone.....	445
<i>Ficus elastica</i> alone.....	147
Cocoanuts alone.....	437
Total.....	5,381
Total on which rubber is planted.....	4,294

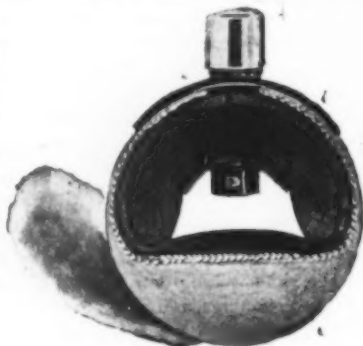
Of the laborers employed on these estates, 1663 are Tamils, 189 Malays, and 154 Chinese and others. The new planting during the year 1901 amounted to 134 acres, devoted to rubber alone.—The Selangor Planters' Association, mentioned from time to time in THE INDIA RUBBER WORLD on account of the interest taken by its members in rubber planting, has been amalgamated with the United Planters' Association of the Federated Malay States.

PLANNING FOR LARGE PROFITS IN TIRES.

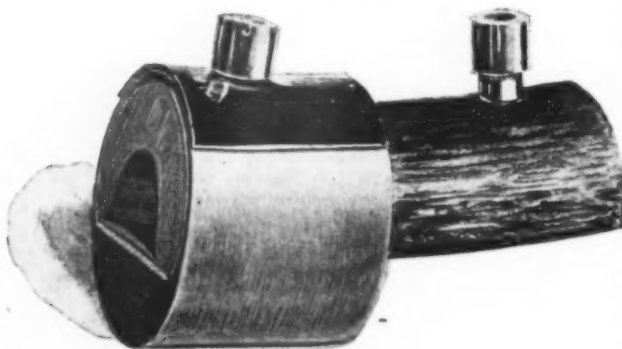
ON September 6 the International Wheel, Tire, and Rubber Co. leased the property of the New Brunswick (N. J.) Tire Co., which, from 1850 to 1896, was employed in the manufacture of shoes by the New Brunswick Rubber Co. The International company were incorporated January 15 last, under New Jersey laws, with an authorized capital of \$3,000,000, to acquire and work certain tire and wheel patents. Recently efforts have been made to secure capital for the new enterprise, and THE INDIA RUBBER WORLD is advised by an official of the company: "We hope to be able to start up the factory in a very short time, and have orders enough to keep quite a force of employes at work for some time, and there will be no trouble to get all the orders that we can take care of."

The principal patent owned by this company is that on the Davis "Common Sense" tire, the invention of E. C. Davis and William F. Ellis, of Springfield, Massachusetts. Patents on this tire have been issued in sixteen different countries, including the United States; applications have been made in five other countries, and it is understood that at least four of them have been allowed. The new tire is not a pneumatic tire, as may be seen from the accompanying cuts; it is not required to be inflated; and is offered as unpuncturable. It is described as being lighter than any cushion tire, less than half the weight of a solid tire, and about 20 per cent. heavier than a good pneumatic tire, without its rigidity.

The company plan to make and sell complete wheels, in which are embraced the patent for the Ellis and Davis nipple, by means of which spokes may be replaced without removing the tire; also the Davis adjustable hub, which "is constructed to fit any axle from $\frac{3}{4}$ inch to $1\frac{1}{4}$ inches in diameter, and can be adjusted to any size within that range inside of three min-



SECTION OF SOLID TIRE.



CONSTRUCTIONAL VIEW OF NEW CARRIAGE TIRE.

utes." The idea is to sell a customer one set of wheels with which he may equip any number of different vehicles, provided that he does not want to ride in more than one at a time. In regard to these wheels, the International company report:

They can be manufactured so cheaply that every other tire manufac-

turer can be undersold and we will still have a profit of 100 per cent. It is safe to say that, as soon as the consumers have an opportunity to learn the splendid quality of these wheels, we will have a monopoly of the wheel and tire manufacturing of the world. Our patents are perfect. No one else can make anything just as good. . . . Our plant will have a total capacity of 4000 wheels a day when the alterations are completed. Running at half our capacity, we can turn out 2000 wheels a day. The market exists for forty times that number of wheels.

The estimated yearly profit of the new company is \$4,080,000, on the basis of 2000 wheels per day, and \$150,000 on general rubber goods, making \$4,230,000 all told, or 140 per cent. on the total capitalization of the company. "This capacity will be doubled when the improvement and alterations are completed. It will mean 280 per cent. on the par value of the stock each year."

In order to provide means for making these improvements, H. N. Field & Co., brokers, of New York, were asked to market 200,000 shares of the company's stock, of the par value of \$1, which they offered at 40 cents per share with a guarantee that the same would be repurchased by the company at an advance of 2 per cent. weekly, from the purchase price, until the market price of the stock should exceed said 2 per cent. weekly. Twelve days later it was announced that the 200,000 shares had been marketed and additional shares were being offered at 50 cents. The company state: "We should not be surprised in the least if this stock sold within the next few years at \$5 per share. . . . You can borrow upon the certificates of this company as much as you can on real estate."

The president of the International company is Walter R. Comfort, president of the Reid Ice Cream Co., New York; the vice president and treasurer is Henry L. Prentice, broker, of New York; the secretary is F. D. Palmer, of Poughkeepsie, New York; the general manager is William Sanford, formerly in a similar capacity with the New Brunswick Rubber Co. and the New Brunswick Tire Co.

A handsome pamphlet issued by the company contains a number of views outside and inside of the New Brunswick factory based upon what must have been very good photographs.

MOZAMBIQUE RUBBER REGULATIONS.

THE British acting consul in the Portuguese province of Mozambique, in reporting on the falling off of certain exports during the year 1901, says that formerly India-rubber was shipped in important quantities from that region to Hamburg and elsewhere, but that the export was stopped entirely in the early part of the year, the authorities stating that owing to the admixture with the rubber of other substances for the purpose of increasing its weight, it was acquiring a bad reputation in the European markets, and that until such time as the collectors could find means to produce a rubber calculated to create a demand for the produce of the country, no more should be exported. Naturally this somewhat arbitrary order had a disastrous result, for many traders who had accumulated large stocks found themselves unable to put their rubber on the market. Later this prohibition was withdrawn by the governor-general, and an order was published in the *Boletim Oficial de Mocambique* of May 10, 1902, permitting the exportation of rubber, subject to the payment of the following *ad valorem* duties: Rubber extracted by cooking 20 per cent.; impure rubber extracted by incision 8 per cent.; rubber extracted by incision, but pure, 3 per cent.

In 1881 the exports of rubber from the port of Mozambique alone reached 507,278 pounds. In 1884 the exports from the whole province were 343,385 pounds, including 143,497 pounds from Mozambique.

JOTTINGS FROM MANAOS.

TO THE EDITOR OF THE INDIA RUBBER WORLD: The managers of the leading buying houses in Manáos, who have been interviewed by your correspondent, are mostly averse to expressing opinions in regard to the size of the rubber crop during the season lately begun. It appears customary, however, to declare that the crop will be very small. From what can be gathered from captains of river steamers and from other sources, it would appear that the rubber crop will probably be a little smaller than last year, and that much of it will be marketed late. Last season's production, by the way, broke all records. The rivers have risen to an exceptional height this year, and the fall has been so slow that the greater part of the lower Juruá and the Purús, all the lakes tributary to the Solimões, the Madeira and Negro are still under water. Hence the rubber gatherers have not gone to work on these rivers, and probably will be unable to do so before November.

The number of boats going up river this year is considerably less than for several years past, owing to the financial crisis from which the rubber centers have not yet recovered. Forty-two steamers left Manáos during August for the Negro, Solimões, Madeira, Purús, Juruá, and the lower Amazon, against sixty-three steamers for the same rivers in August last year. Fairly good cargoes of rubber may be expected from the Juruá and Madeira: a decline from the Purús and Negro, and about the same as usual from the Solimões. The health of the rubber regions is fairly good.

There is likely to be little Caucho cut this year, and what is gathered will be shipped as ball or strip. Advices from Peru are that the Caucho is practically exhausted on the Purús and Juruá, but that new fields are being opened on the Casiquiare, Tapajós, and Xingu. The new crop of Caucho on the Ucayali will probably be cut next year, when it can be determined whether, as the Indians claim, the new Caucho trees which spring up from the roots of those cut down will yield a good quantity of latex.

New rubber fields have been discovered on the Juruá, but the tree does not appear to be the *Hevea*, answering more nearly to the description which THE INDIA RUBBER WORLD has given of the Mexican *Castilloa*. The rubber obtained is said to be weak—i. e., to break easily on tension, but the captain of one of the river steamers informs me that the *sernamby* (coarse) is excellent, and even better than that obtained from the *Hevea*. I hope to visit the new rubber fields in October and to send you a fuller description of the same.

Some of last year's product of Upriver rubber was of rather poor quality, which, in the opinion of some, was due perhaps to the fact that the floods last season were less extensive than usual and rapidly subsided. It is held here that the longer the rubber fields are under water in any year, the better will be the quality of the rubber and the greater the amount obtained. If there is anything in his theory it may be that the irrigation of plantations may prove desirable where the same species of rubber is cultivated.

During August the receipts at Manáos included 741,902 kilograms of rubber and 51,017 of Caucho, as against 783,775 and 67,062 kilograms, respectively, in August, 1901. The greater part of the rubber was received from the Madeira and Purús.

Things are very quiet in the rubber market, fears, or hopes, of a fall in exchange being freely expressed and the up country merchants awaiting developments. Stocks in Manáos consist of 22 tons of fine and coarse.

Several large land owners are considering seriously the question of importing Chinese labor for rubber work, owing to the

lack of sufficient native labor. [One obstacle to the importation of Chinese labor into the Brazilian rubber fields is pointed out by Mr. Ashmore Russian in THE INDIA RUBBER WORLD of October 1—page 6.—THE EDITOR.]

It is believed that Balata (*Mimuseps*) abounds along the Solimões, Jutahy, and some other streams, and there is a revival of talk of having these resources explored, but up to date the enterprise has not passed the talk stage.

The Acre controversy continues to excite the passions of everybody. An expedition has gone there with a view to establishing the independence of that territory and later of handing it over to Brazil. As long as the revolutionists remain in the mouth of the Acre no rubber can come out, and naturally until the trouble is over the working of rubber gathering will be paralyzed. I presume that you already know that Minister Murtinho has closed the Amazon to the passage of goods destined for Bolivia.

The Associação Commercial has been creating quite a furor because the government, in leasing the state pier to the Manáos Harbour, Limited, required that all rubber shipped from Manáos be boxed in the warehouses appertaining thereto. The governor refused to pay any attention to its complaints, whereupon the association declared war against the Booth line of steamers, because Alfred Booth is a director in the Manáos Harbour, Limited. Work has already been begun on the port improvements, including the construction of the huge warehouse for the reception of rubber.

The Brazilian federal government at last has decided to assist agricultural effort and offers to supply seed of *Hevea*, manihoba (Ceará rubber), cotton, etc., to anyone who, being a *bona fide* land owner and planter, applies to the minister of industry. Several residents of the Autaz district of the Madeira are beginning to plant rubber. In Anatay exists a plantation of 3000 *Heveas*, and in Bocapeguena one of 2000. A man in Caiçana, on the Solimões, has planted 800 manihobas and 1000 *Heveas*.

R. Mardock evidently has resigned as manager of the Amazon Telegraph Co., Limited, as he is seeking a state subvention for a wireless telegraphy system between Pará and Manáos. Meanwhile a representative of Marconi is on the ground, threatening an action for infringement. On the 16th, Mardock and C. H. Anchas (an American) gave a dinner to the governor, the members of congress, and the press, during which a wireless message was dispatched across the rio Negro. The message was not received on the other side, because—the receiver had burnt out.

LYONEL GARNIER.

Manáos, Brazil, September 20, 1902.

RUBBER RECEIPTS AT MANAOS.

DURING the first three months of the crop season—July 1 to September 30—and compared with former years:

FROM—	1902.	1901.	1900.
Rio Purús.....	768	880	695
Rio Madeira.....	734	594	699
Rio Juruá.....	231	304	189
Rio Javary—Iquitos.....	155	155	34
Rio Solimões.....	163	257	105
Rio Negro.....	65	16	1
Total.....	2116	2206	1723
Caucho.....	259	391	292
Total.....	2375	2597	2015

Letters received by the trade at New York predict that several thousand tons of rubber will be delayed in transit from Bolivia this year, in order to avoid the payment of double export duties—to Bolivia and Brazil—which accumulation may be a disturbing factor in the market all season.

INDIA-RUBBER GOODS IN COMMERCE.

EXPORTS FROM THE UNITED STATES.

OFFICIAL statement of values for the first eight months of 1902, compared with the same period of three years preceding, not including exports to Hawaii and Porto Rico:

MONTHS.	Belting, Packing, and Hose.	Boots and Shoes.	All other Rubber.	TOTAL.
January-July.	\$386,105	\$355,092	\$1,116,558	\$1,857,755
August, 1902.	73,766	169,537	181,574	424,877
Total	\$459,871	\$524,629	\$1,298,132	\$2,282,632
Total, 1901.	398,917	394,397	1,203,086	1,996,310
Total, 1900.	359,840	350,286	1,000,839	1,710,965
Total, 1899.	(a) 110,604	169,688	1,024,206	1,304,498

(a) Included in "All Other" prior to July 1, 1899.

The number of pairs of rubber boots and shoes exported during August was 386,334, against 260,707 pairs in the same month of 1901, and 221,021 pairs in August, 1900.

RUBBER GOODS EXPORTS FROM NEW YORK.

USUALLY about 60 per cent. of the total exports of rubber goods from the United States are shipped from New York. The value of such shipments from this port during the three months ending September 30, 1902, was \$434,839, and the destination of exports was as follows:

FOUR WEEKS ENDING JULY 29.

Details in THE INDIA RUBBER WORLD, September 1. . . . \$117,578

FOUR WEEKS ENDING AUGUST 26.

Argentina. . . \$	150	Denmark. . .	682	Norway. . . .	432
Australia. . .	5,042	Dutch W. Ind.	40	Nova Scotia. .	283
Aus.-Hung'y.	282	Ecuador. . .	953	Port. Africa. .	674
Belgium. . . .	3,233	Egypt. . . .	12	Peru.	45
Brit. E. Ind.	258	France. . . .	4,484	Philippines. .	6,745
British Africa	7,331	Germany. . .	11,700	Russia. . . .	25
Brit. W. Ind.	573	Great Britain.	42,983	Sweden. . . .	437
Brazil.	532	Haiti.	66	Switzerland. .	1,258
China.	225	Italy.	521	San Domingo. .	85
Central Amer.	1,028	Japan.	2,772	Turkey. . . .	13,699
Chile.	352	Mexico. . . .	3,583	Venezuela. . .	323
Cuba.	6,203	Netherlands. .	1,142		
Colombia. . . .	895	New Zealand. .	55	Total. . . \$	119,103

FOUR WEEKS ENDING SEPTEMBER 23.

Argentina. . . \$	194	Dutch E. Ind.	60	Nova Scotia. .	315
Australia. . .	7,497	Dutch Guiana	51	Peru.	570
Aus.-Hung'y.	1,552	Dutch W. Ind.	66	Philippines. .	394
Belgium. . . .	2,051	Ecuador. . .	187	Port. Africa. .	99
Brazil.	857	France. . . .	11,961	Russia. . . .	995
Brit. Africa. .	8,147	Germany. . .	16,165	San Domingo. .	191
Brit. E. Ind.	688	Great Britain	58,987	Spain.	3,134
Brit. Guiana.	229	Haiti.	22	Sweden. . . .	2,253
Brit. W. Ind.	795	Italy.	4,261	Switzerland. .	3,867
Central Amer	170	Japan.	3,515	Turkey. . . .	3,162
Chile.	808	Mexico. . . .	2,102	Turkey (Asia) .	3,542
Colombia. . . .	418	Netherlands. .	4,413	Venezuela. . .	512
Corea.	8	Newfoundld.	247		
Cuba.	7,125	New Zealand	3,079	Total. . . \$	161,041
Denmark. . . .	1,762	Norway. . . .	3,540		

WEEK ENDING SEPTEMBER 30.

Details in the next INDIA RUBBER WORLD. \$35,117

The average value of such exports for the thirteen weeks was \$33,449. The weekly average during the corresponding three months two years ago was \$26,969.

Some other exports from New York during the three months ended September 30, 1902, were in value as follows:

CLOTHES WRINGERS.		Copenhagen ..	1,150	Hull.....	3,029
Abo.	\$ 20	Drammen.	20	Kiel	125
Antwerp.	2,488	Düsseldorf.	330	Liverpool.	684
Bremen.....	98	Frankfort.....	692	London	5,018
Brussels	131	Glasgow	1,290	Manchester ...	22
Bordeaux.	85	Gothenberg.	342	Rotterdam ..	3,687
Bremerhaven ..	270	Hamburg.....	3,494	Stockholm ..	506
Christiana	1,536	Havre.....	389	Stavanger.	75

		RUBBER THREAD.		RECLAIMED RUBBER.	
Wiborg.....	105				
Windau.....	80	Antwerp.....	\$ 2,675	Christiana....	\$ 940
Wassa.....	20	Barmen.....	300	Genoa.....	5,600
Argentina....	168	Genoa.....	5,260	Glasgow.....	18,236
Mexico.....	67	Hamburg....	12,145	Hamburg.....	5,293
New Zealand..	3,487	Havre.....	2,359	Havre.....	12,694
Peru.....	23	Hull.....	1,427	Liverpool....	5,980
Uruguay.....	24	Rotterdam..	3,487	London.....	1,428
Australia.....	3,161	Central Amer..	1,235	Stettin.....	25
Japan.....	18			Japan.....	230
British Africa.	683	Total.....	\$28,888		

Total. . . \$33,317

Total	\$33,317	Antwerp.	\$ 601	CRUDE RUBBER.	
DRESS SHIELDS.		Barcelona.....	300	Christiana	\$ 936
Antwerp.....	\$13,834	Brussels.....	250	Gothenberg....	75
Russia.....	100	Breslau.....	60	Glasgow.....	1,717
Glasgow.....	1,409	Copenhagen....	250	Hamburg.....	19,734
Havre.....	2,217	Christiana.....	10	Havre.....	20,472
Hamburg.....	49,580	Frankfort.....	400	Liverpool.....	26,320
Liverpool.....	20,365	Fiume.....	50	London.....	7,010
London.....	29,697	Hamburg.....	910	Lyons.....	88
Odessa.....	514	Genoa.....	15	Leith.....	14,351
Rotterdam....	954	Mannheim.....	64	Manchester....	1,050
Vienna.....	640	Offenbach.....	16	Vienna.....	50
Argentina.....	375	Rotterdam.....	815	Japan.....	441
New Zealand..	445	Vienna.....	18	British Africa..	360
Mexico.....	645	Cuba.....	135	New Zealand..	11
Australia.....	2,551	British Africa..	34	Nova Scotia....	58
		Australia.....	60		

Total. . . \$123,326

The goods classed under the above headings do not embrace all the manufactures of India-rubber exported. For example, some hard rubber, not embraced in the table above, must have been included in the exports of "electrical material," which in a recent week amounted in value to \$41,041, aside from "electrical machinery." Then some of the vehicles, bicycles, and baby carriages exported must have had rubber tires. "Bicycle materials" amounted in the same week to several thousand dollars, dental goods to \$6966, and there were toys, sporting goods, photographic supplies, druggists' sundries, scientific instruments, and numerous other items of which rubber often forms a part. Outfits of mining machinery and the like—a single shipment of "drilling material" amounted to \$11,412—doubtless embrace more or less rubber hose, belting, packing, etc., not separately specified in the customs statistics. Carpet sweepers, exported during the week to the value of \$1388, and "talking machines," worth \$12,744, also involve the use of rubber; there was a telegraph cable invoiced at \$3205; there were stamp goods—and the list might be extended indefinitely.

Boston ranks next to New York in the value of rubber goods exported, with small quantities from several other ports.

CANADIAN RETURNS.

VALUES of imports for consumption, for the year ending June 30, 1902, of India-rubber and Gutta-percha, and manufactures thereof:

Crude.	1900-01.	1901-02.
From Great Britain.	\$1,986,913	\$1,656,275
" United States.	254	5,966
" Other countries.	1,969,474	1,628,205
Manufactured.	17,185	22,104
From Great Britain.	609,891	771,426
" United States.	135,384	217,477
" Other countries.	439,649	371,053
	21,858	31,986

The smaller return for raw material for the past year doubtless is to be accounted for in part by a slightly smaller importation, but chiefly in the lower prices of India-rubber prevailing since January last.—The crude materials embraced in the return for 1901-02 were:

Gutta-percha (7358 pounds).	\$	2,125
India-rubber (2,903,080 pounds).		1,404,257
Reclaimed rubber and rubber substitute.		249,893
Total.	\$	1,656,275

NEWS OF THE AMERICAN RUBBER TRADE.

INTERNATIONAL RUBBER MANUFACTURING CO.

THIS company have purchased the plant formerly owned and operated by the U. S. Rubber Reclaiming Works, at Provost street and Pavonia avenue, Jersey City, New Jersey, for the purpose of manufacturing solid rubber tires and a general line of mechanical rubber goods. They are putting in the latest designs in machinery for the manufacture of hose, belting, and the like, and hope to be able to begin the marketing of such goods by December 1. They are already equipped for making tires and molded goods, having now in operation nine 5 plate hydraulic presses for molded goods, 4 large vulcanizers for tires, etc. They are having erected two 3 roll and one 5 roll calender. The president of the company is Berthold Loewenthal, and the secretary, treasurer, and general manager is Edward B. Loewenthal. The New York office, at Nos. 290-291 West street, is in charge of the general manager, and the Chicago office, Nos. 160-162 Fifth avenue, in charge of the president. The general superintendent of the factory is W. T. Snowden, formerly with the Manhattan Rubber Manufacturing Co. and the Plymouth Rubber Co. John W. Teller, some time with the Diamond Rubber Co., and lately manager of the New York office of the Pennsylvania Rubber Co., has been appointed sales manager of the mechanical department, and Samuel H. Robinson sales manager of the solid tire department. The company's selling force includes also H. W. Harrison, L. F. Stillwell, and H. L. MacDonald.

THE MANUFACTURED RUBBER CO.

At a special meeting of the shareholders, held on October 16 at Camden, New Jersey, it was voted to adopt a plan of reorganization which involves an amended certificate of incorporation. The company was organized in May, 1899, with an authorized capital of \$6,000,000, divided into 20,000 cumulative 8 per cent. preferred shares of \$50, and 100,000 common shares of \$50. The 100,000 shares of common stock are to be exchanged for 50,000 shares of the new common stock, full paid and non-assessable. The 20,000 shares of 8 per cent. cumulative preferred stock are to be exchanged for an equal number of shares at 6 per cent. cumulative preferred stock. The payment of the call already made of \$1 per share on the old preferred stock was guaranteed by a syndicate which will receive as consideration a certain amount of new common stock. The remaining shares of the new common stock will be retained in the treasury for future use. The new board of directors consists of W. W. Gibbs, Charles W. Sloan, Joseph Appleton, Charles T. Dunn, Clayton E. Platt, Robert B. Baird (president of the Rubber Trading Co., of New York) and John S. Windt. The company have been making reclaimed rubber for the past eighteen months at Metuchen, New Jersey.

HENRY SMYTHE (NEW YORK).

SEVERAL judgments having been entered against Henry Smythe, rubber broker, of No. 3 South William street, New York, a meeting of his creditors was called and held at his office on October 9, when, after a statement had been made of Mr Smythe's affairs, it was resolved by unanimous vote that Woolsey Carmalt, attorney at law, No. 35 Nassau street, be appointed trustee of all accounts receivable, stock on hand, etc., with an advisory committee composed of Frank A. Dillingham, Hermann Reimers, and Dwight B. Cruikshank, to be consulted in regard to the marketing of such stock—the resolution to be effective

upon being ratified by all unsecured creditors. Mr. Smythe did not ask for any release of claims against him. He only asked time to realize on assets which he believed were sufficient to discharge his indebtedness in full, but which were of such a nature that they could not do so when administered through an assignee in bankruptcy.

RUBBER BELTING IN TENNESSEE.

THE census returns of manufactures embrace details from 18 factories under the classification "Belting and Hose—Rubber," including one in Tennessee. There is, of course, no rubber factory properly so called in that state, but the census returns embrace "value of product, including custom work and repairing." The enumerators at work in Memphis appear to have included the work done in putting up rubber belting by Towner & Co., of that city, who are large dealers in such goods. With this explanation, Tennessee is entitled to be credited with one rubber factory, though no similar establishment in any other state is classed under the same heading.

AMERICAN VACUUM DRYING MACHINE CO.

THIS company has purchased the patent rights of the Alex. P. Mende vacuum drying chambers, which have been mentioned in THE INDIA RUBBER WORLD as having been successfully employed in a number of rubber factories for the drying of crude rubber. Mr. Mende is president of the new company. Facilities have been secured at New Hamburg, New York, for the building of the apparatus. The New York office of the company is at No. 120 Liberty street, where the apparatus can be examined. The laboratory vacuum drying chambers, 15" X 18," with about two square feet of pan service, suitable also for practical drying tests preparatory to ordering large vacuum drying chambers, is for sale by Eimer & Amend, wholesale druggists and manufacturing chemists, at Third avenue and Eighteenth street, New York, and can be seen in operation at their store.

THE EUREKA FIRE HOSE CO. (JERSEY CITY).

SOME improvements in the plant of this company now under way will include the erection of additional buildings for the extension of their various departments, and to meet the steadily increased demand for their brands of fire hose. They have decided to discard their present direct-current power transmission system and to adopt an alternating current system, in order to reduce the cost of fire insurance when motors are used in the presence of inflammable material. This step has been taken on the advice of one of the largest insurance companies. The new apparatus will include one 75 kilowatt belt-driven alternator, furnishing two-phase current at 7200 alternations and 220 volts; also exciter, switchboard equipment, slide rails, rheostats, etc. A number of induction motors have been purchased, including five of 15 H.P., one of 10 H.P., five of 5 H.P., and three of 2 H.P. With these will be furnished a switchboard panel completely equipped with instruments and switches. The entire electrical equipment has been ordered from the Westinghouse Electric and Manufacturing Co.

THE AMERICAN BICYCLE CO.

At the date announced for the annual meeting at Jersey City—October 14—there were not a sufficient number of shareholders present to form a quorum, and an adjournment was taken, subject to a call by the shareholders. As mentioned in the last INDIA RUBBER WORLD, the company is in the hands of receiv-

ers, who are large holders of the company's obligations. Just when the reorganization committee will have plans completed for the adjustment of the company's affairs is reported to be uncertain. It is stated that the order of the court permitting the issuance of certificates to the amount of \$500,000 against the stocks of the International Motor Car Co. and the Federal Manufacturing Co., which are owned by the American Bicycle Co., will put the affairs of those concerns in a much stronger position. It is said that the entire \$500,000 has been subscribed. It is intimated that the American Cycle Manufacturing Co., which is also controlled by the American Bicycle Co., and is in the hands of receivers, will seek to improve its finances by asking the court for permission to issue some sort of certificates.

IOWA RUBBER CO. (DAVENPORT, IOWA).

THIS company have filed amended articles of incorporation with reference to the shares of capital stock. Formerly their capital of \$300,000 was divided into 10,000 shares of \$30 each. Under the change the total number of shares is 1000, of \$300 each. Frank M. Hanna is president; Fred W. Noel, vice president; and S. H. Noel, secretary and treasurer.

NEW YORK STOCK EXCHANGE QUOTATIONS.

UNITED STATES Rubber Co.:

DATES.	COMMON.			PREFERRED.		
	Sales.	High.	Low.	Sales.	High.	Low.
Week ending Sep. 20	6,500	19	17	2,650	59 $\frac{3}{4}$	57
Week ending Sep. 27	5,115	19 $\frac{1}{2}$	16 $\frac{1}{2}$	1,060	59	56 $\frac{3}{4}$
Week ending Oct. 4	3,100	19 $\frac{1}{2}$	17 $\frac{1}{2}$	1,200	58 $\frac{3}{4}$	56 $\frac{1}{2}$
Week ending Oct. 11	1,247	18	17 $\frac{3}{4}$	600	56 $\frac{1}{2}$	55
Week ending Oct. 18	530	17 $\frac{1}{2}$	17	586	56	54
Week ending Oct. 25	3,470	19 $\frac{1}{2}$	18	1,350	58	71 $\frac{1}{2}$

RUBBER GOODS Manufacturing Co.:

DATES.	COMMON.			PREFERRED.		
	Sales.	High.	Low.	Sales.	High.	Low.
Week ending Sep. 20	14,430	23 $\frac{1}{2}$	20 $\frac{1}{2}$	2,780	72	68 $\frac{3}{4}$
Week ending Sep. 27	3,510	22 $\frac{1}{2}$	21	160	71	71
Week ending Oct. 4	2,900	22 $\frac{1}{2}$	20 $\frac{1}{2}$	100	68 $\frac{3}{4}$	68 $\frac{3}{4}$
Week ending Oct. 11	2,040	21	20 $\frac{1}{2}$	100	69	69
Week ending Oct. 18	4,700	22 $\frac{1}{2}$	20	500	71	69
Week ending Oct. 25	14,360	25 $\frac{1}{2}$	23	2,780	73	71 $\frac{1}{2}$

PEQUANOC RUBBER CO. (BUTLER, N. J.)

THE Pequianoc Rubber Co. have increased their capital stock from \$60,000 to \$120,000, and are planning several additions to their plant, having been obliged for some time past to work their factory night and day in order to keep pace with their orders. They have developed a splendid reputation for a high grade reclaimed rubber made by a purely mechanical process, perfected on new lines, the product of which is winning great confidence in the rubber trade. It is unusually clean and free from metals, adulterants, acids, or alkalies, and the fiber is as cleanly removed by the mechanical process as by any chemical process. Mr. Joseph F. McLean, president and manager of the company, has developed a large acquaintance with the rubber trade throughout the country, having been in the rubber business all his life, and he has brought to the reclaiming business a practical knowledge of how the product is used in the different branches of the rubber industry, and thus been aided in developing a standard of product for the Pequianoc company that is appreciated by the trade.

A RUBBER SUIT DISMISSED.

THE bill in equity brought by Charles R. Flint, of New York, against the Boston Woven Hose and Rubber Co. *et. al.* of Boston, to enforce against Theodore A. Dodge and others, as president and directors of that company, the liability imposed by

the Massachusetts revised laws, Chapter CX, section 58, to pay an unsatisfied judgment of \$22,503 held by the plaintiff against the corporation, upon the ground that its debts exceeded its capital stock, was dismissed in the superior court at Boston on October 23, demurrers filed by the defendants having been sustained. The plaintiff, it is decided, cannot maintain his bill because it did not appear that the excess of the corporation's debts over its capital stock was on Sept. 30, 1899, when he began his suit, in which he got judgment, as the statute requires. He alleged that, on June 16, 1898, when the company made an assignment for the benefit of its creditors, its direct liabilities were \$1,160,000, and its indirect liabilities were \$350,000, while its capital stock was only \$900,000. Subsequently, by the payment of dividends by the assignees to those creditors who assented to it, the company's debts, he alleged, had become reduced to less than the amount of the capital stock.

NEW INCORPORATIONS.

INTERNATIONAL Rubber Manufacturing Co. (Jersey City, N. J.), September 29, under New Jersey laws, to manufacture mechanical rubber goods; capital, \$100,000. Incorporators: Berthold Loewenthal, Edward D. Loewenthal, Wesley T. Snowden. Further details are given in another column.

=The Lyon Rubber Co. (Akron, Ohio), October 1, under Delaware laws; capital, \$10,000. This company has been engaged; for some months past, in the manufacture of rubber gloves, nipples, ice bags, and the like.

=Hanover Rubber Co., October 15, under New York laws; capital, \$4000. Incorporators: Thomas F. Stevenson and T. S. Corey, of Brooklyn, and G. R. Shepard, of New York. The object is the proofing of cloth for the mackintosh trade, and machinery is now being secured for a plant to be erected in Brooklyn. The new company hope to be able to handle wider goods than any now on the market.

=Superior Rubber and Manufacturing Co., October 21, under New Jersey laws; capital, \$150,000. Incorporators: C. V. Childs, S. Bloomfield, and H. N. Smith. Registered office: No. 525 Main street, East Orange, New Jersey. The company will manufacture rubber sundries and molded goods at Cuyahoga Falls, near Akron, Ohio, and several Akron parties are interested.

=THE INDIA RUBBER WORLD has a letter from Chicago stating: "Noting the item in your number of October 1, in which it is stated, referring to the incorporation of the Empire Rubber Manufacturing Co., Chicago, under the Illinois laws, that such company was to cover the business in Illinois of the New Jersey corporation of the same name, I will ask you to please correct said statement. The Illinois company has no connection whatever with the New Jersey company." An inquiry for more details regarding the new company brought the response: "The incorporators of the Empire Rubber Manufacturing Co. do not care to give out any information regarding their business. A little later on they will be pleased to accede to your request."

TRADE NEWS NOTES.

THE Single Tube Automobile and Bicycle Tire Co. are proceeding against the Lake Shore Rubber Co. (Erie, Pennsylvania) for infringement of the Tillinghast tire patent. Their bill of complaint was filed July 30 last, in the United States circuit court for the western district of Pennsylvania.

=C. C. Sigler, formerly a rubber manufacturer in Cleveland, Ohio, as Sipe & Sigler, making hard-rubber battery jars for the Willard storage battery, has entered the wholesale jewelry business at Akron. Mr. Sigler was formerly in this business before he took up the rubber manufacture. Several disastrous fires in the factory were the main cause of his leaving the latter.

=Legal proceedings have been instituted by the interests now in control of the Rubber Goods Manufacturing Co. against parties formerly in the company, or in constituent companies, to compel the latter to take up certain unmarketable securities which now figure in the assets of the Rubber Goods company. The securities are reported to be second mortgage bonds of the Park Row Syndicate building, in New York, amounting to \$900,000. While interest has been paid regularly on these bonds, there has been no market in which they could be sold at par. The opinion has been expressed in the trade that these bonds will be taken out of the hands of the company without the proposed suits being brought to trial.

=The Pure Gum Specialty Co. (Barberton, Ohio) are forging ahead and are expanding at a very gratifying rate. They have recently added new machinery and new boilers, and more improvements and additions are being planned. They have a fine trade in some of their patented specialties, besides their regular line of standard dipped goods.

=The coal strike did not inconvenience the rubber factories at Akron, as most of them had a pretty good supply. A prominent manufacturer said one day that he had on hand a supply for 30 days, and as the railroads had only about the same he was not worrying over the strike, for if the roads could not haul the goods there would be no object in making them.

=The Excelsior Hard Rubber Co. (Mineral City, Ohio) have started their factory and are now in full swing. They are making a high grade line of specialties and are doing very nicely. They employ about 25 people and expect to increase their force shortly.

=S. G. Rigdon, manager of the tire department at the Goodyear Tire and Rubber Co. (Akron, Ohio), has resigned and accepted a position with the International Wheel, Tire and Rubber Co. William Dean, manager of the Chicago office of the Goodyear company, has taken his place.

=Edward H. Garcin, vice president of the Trenton Rubber Manufacturing Co., and his associates, have purchased for \$270,100 in cash the shares of the Pennsylvania Furnace Co. of Philadelphia. At the annual meeting, on October 14, the treasurer's report stated that the furnace output for the year had been 76,263 tons and the net profit \$3877.

=Hamilton M. Lockwood, formerly of the Stoughton Rubber Co., has accepted a position with the Clifton Manufacturing Co., of Boston.

=The National India Rubber Co. (Bristol, Rhode Island) are reported, in view of the scarcity and high price of fuel, to have furnished to their employes 400 tons of bituminous coal at cost.

=The Pneumatic Mattress and Cushion Co. (New York), have a very notable exhibit of their goods at the fair now being held at the buildings of the Charitable Mechanics Association in Boston. This exhibit is probably the most complete that has ever been given of pneumatic cushions, embracing the finished cushions and beds of all types, and has something to attract the interest of the passer-by. Skilled workmen are shown making up the goods preparatory to vulcanization.

=The Apsley Rubber Co. (Hudson, Massachusetts) are manufacturing three grades of rubber footwear this season—the "Apsley," "Hudson," and "Middlesex" lines.

=The Mount Vernon and Woodbury Cotton Duck Co. have closed the Greenwoods mills, at New Hartford, Connecticut, and the machinery is being moved South. A few months ago 700 employes were at work in the mills.

=W. C. Coleman, of Boston, reports a transaction in high grade miscellaneous rubber scrap, amounting to between \$24,000 and \$25,000, deliveries to be made to an Eastern mill in weekly shipments for the next three months.

=The partnership between Lewis S. Hoyt and Benjamin E. Phillips, Jr., under the firm name of Hoyt Rubber Co., at No. 280 Dover street, Boston, was dissolved on October 17. The accounts of the firm will be settled by Mr. Phillips, who will continue the business at the same address.

=The electric department of the Brookline Gas Light Co. (Allston, Massachusetts) has placed an order for a 250 H. P. boiler with the Hazelton Boiler Co. (Rutherford, New Jersey.) This makes a total of 1000 H. P. at this plant. A 400 H. P. Hazelton boiler has been ordered by the Apsley Rubber Co. (Hudson, Massachusetts.)

=The Bowers Rubber Co. (San Francisco, California), make a type of hose they call "Sun Proof." The cover of the hose is of a special compound of a bright orange hue, and it has the faculty of resisting sunlight so that the hose lasts wonderfully well. The company are having a large and increasing sale in it.

=The business of manufacturing bleaching, dyeing, drying, printing and finishing machinery, heretofore conducted by the separate firms of the Granger Foundry and Machine Co., The Thomas Phillips Co., of Providence, Rhode Island, and The Rusden Machine Co., of Warren, Rhode Island, will, after October 1, 1902, be conducted by The Textile-Finishing Machinery Co., of Providence, which company has purchased all the interests in the above lines, including patterns, patents, tools, good will, etc., formerly possessed by these concerns.

=Since 1895 every foot of fire hose used by the fire department of the city of San Francisco, California, has been manufactured by the Bowers Rubber Co., of that city. It speaks well for the life of the goods when one notes that in all that time not one length has failed during service.

=The office of The Fossil Flour Co. has been returned to New York, at the former location, No. 229 Pearl street, where orders and remittances should be sent to insure prompt attention.

=The Bowers Rubber Co. (San Francisco, California) have opened a distributing depot for their goods at No. 44 South Clinton street, Chicago. The Chicago business will be in charge of S. M. Engs.

=It is reported that the British patents for Bailey's "Good Samaritan" hot water bottles have been acquired by the Charles Macintosh & Co., Limited, of Manchester, England. The Canadian patents have been acquired by Leeming, Miles & Co., of Montreal.

=The New York *Commercial* has an article on the completion of the Granby Consolidated Power and Smelting Co., at Grand Forks, British Columbia. It says that the output of the Granby mines now aggregates about 532,000 tons of ore, all of which has been treated at the company's own smelting works. This company, by the way, is controlled by Mr. S. H. C. Miner, president of the Granby Rubber Co., at Granby, Quebec.

=A dividend of 1 per cent. on the common stock of the American Chiclé Co. has been declared, payable November 10.

=William T. Baird, for twenty-nine years connected with the New York Belting and Packing Co., Limited, and for several years past treasurer of the company, will probably leave that position to become connected in an important way with the Rubber Trading Co. of New York, which, incorporated last March to buy and sell crude rubber, has already made for itself an important position in the rubber trade.

=A new company in which two Akron men are leading spirits is about to be organized to manufacture rubber dipped goods at Massillon, Ohio.

=The Chicago branch of the Empire Rubber Manufacturing Co. (Trenton, N. J.) has been removed to No. 20 La Salle street, and Mr. Walter F. Taylor placed in charge.

=The Miller Rubber Manufacturing Co. (Akron, Ohio) recently bought a considerable block of real estate adjoining their factory, but it is understood that no addition to their plant is under consideration at this time, they having just completed a large addition.

=The Trenton Rubber Manufacturing Co. and John R. Kuser, have made application for a receiver for the Munger Automobile Tire Co., (Trenton, New Jersey) the application being returnable on November 5. If this is granted the company undoubtedly will be reorganized.

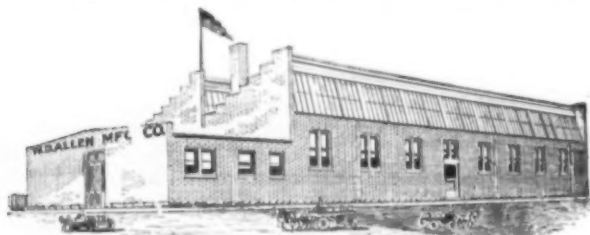
=The Safety Sectional Pneumatic Tire Co., of Binghamton, New York, has been incorporated, with \$500,000 capital, of which \$200,000 is reported to have been subscribed, to make a tire invented by a Mr. Miller.

NEW ENGLAND RUBBER CLUB.

THE circular that announces the next dinner of the New England Rubber Club is in the form of an old-fashioned "Thanksgiving Proclamation" written in the English of one hundred years ago, and citing "Ye members of ye New Englands Rubber Clubbe to appear at ye goodly house of enter-taynement, known as ye Exchange Clubbe, on ye evenynge of ye 20th of Novembre as ye town clock strykes six." The proclamation promises addresses by "worthie citizens, myrth producing stories, musick, and much enter-taynement."

THE W. D. ALLEN CO.'S NEW FOUNDRY.

OWING to the large increase in the volume of their business during the past three years, and also their desire to keep abreast of the times both as regards output and methods of manufacture, The W. D. Allen Manufacturing Co. (Chicago) decided last year to build a foundry that would be fully capable of taking care of their greatly expanded business, and, at the



same time, fortify them against future needs. Commensurate with this resolve is the new structure shown in the illustration which is conceded to be the best equipped brass foundry in the West, if not in the United States, neither pains nor expense having been spared to add to the efficiency of the plant and the comfort of the employes. The building is of substantial stone and brick construction and is equipped with the saw tooth roof, which affords an abundance of light and is of great assistance to the employes. With its new equipment the company will be in a position to cope with any demand, and they hope that they may not again be placed in the embarrassing position of refusing to accept orders, as happened during the past season owing to limited capacity.

WORK OF THE RUBBER STEALINGS COMMITTEE.

FOR a year past the Committee named above have been working quietly on projects for the suppression of the stealing of crude rubber, which is more prevalent in the United States than most manufacturers may believe. As a result of their work a large amount of material has been collected. The Committee have also conclusive evidence of the existence of organized rings, and have discovered as well the middlemen or "fences" through whom the stolen rubber is marketed. The Committee are not disposed to take the public into their con-

fidence, but it is understood that an even more vigorous campaign against the rubber thieves will be inaugurated very soon.

AMERICAN GOLF BALLS TO BE MADE ABROAD.

THE various reports which have got into print in relation to the manufacture of golf balls in Great Britain under American auspices evidently had their basis in the fact that the St. Mungo Manufacturing Co., of Glasgow, Scotland, have entered into a contract with the owners of the Kempshall golf ball patents to manufacture these balls in Great Britain. It is reported that the Kempshall company sent several people over as the nucleus for a working staff at Glasgow, and from another source it is learned that balls manufactured at Glasgow are expected to be on the market by December 1. As soon as the new product is offered for sale, a suit will doubtless be brought for infringement against the British patents on the Haskell ball. The Kempshall Manufacturing Co. (New York), asked about their foreign enterprise, referred the inquirer to their London offices.

MILWAUKEE TO HAVE A RUBBER FACTORY.

ARTICLES of incorporation of the Milwaukee Rubber Works, with \$200,000 capital, were filed on October 11 under the laws of Wisconsin, with the purpose of manufacturing a general line of mechanical rubber goods. A tract of 10 acres has been secured as a site, and buildings will be erected on special designs.

NEW RUBBER FACTORY IN NEW YORK STATE.

ON October 10 work was begun on the construction of the factory of the Sweet Tire and Rubber Co. (Batavia, New York), the incorporation of which was mentioned in THE INDIA RUBBER WORLD of September 1 (page 400). The board of trade raised \$1800 to buy a site. Orders for the Sweet vehicle tire have been received in encouraging numbers, and the company hope to be making them by New Year.

PERSONAL MENTION.

MR. FREDERIC C. SAYLES, of Providence, Rhode Island, a director of the United States Rubber Co., and largely interested in the woolen industry, has presented to the town of Pawtucket, at a cost of \$250,000, a library to be known as the Deborah Cook Sayles Memorial Free Public Library.

=Mr. P. A. Birley, of the great firm of Charles Macintosh & Co., Limited (Manchester, England), arrived in the United States on the *Saxonia* on October 27. Mr. Birley expects to spend about a month in the States and will visit many of the prominent rubber manufacturers while here.

=Mr. George W. Sherman, of the North Western Rubber Co., Limited, of Liverpool, and formerly with the Diamond Rubber Co., is expected to arrive at Akron early in November, when his marriage to Miss Crumrine will take place.

=Mr. Walter A. T. Norris, secretary to the Hon. E. S. Converse, president of the Boston Rubber Shoe Co., and Miss Winifred Ricker, of Melrose, Massachusetts, were married on the evening of October 7, and will make their residence in Melrose. The office force of the Boston Rubber Shoe Co. joined in making a handsome wedding present.

* * *

RECEIVERS have been appointed for the Atlantic Coast Lumber Co. and the Export Lumber Co. of America, as a step preliminary to their reorganization. They were organized several years ago by Charles R. Flint and his associates for the purpose of developing the lumber industry in the Virginias and the Carolinas. Mr. Flint and Wallace B. Flint, his brother, resigned as officers and directors of the Export Lumber Co. in January last, but Charles R. is mentioned as being a shareholder at this time.

THE RUBBER TRADE AT AKRON.

BY OUR RESIDENT CORRESPONDENT.

TO THE EDITOR OF THE INDIA RUBBER WORLD: There have been no important developments the past few weeks in the union labor situation with reference to the Akron rubber factories. The Rubber Workers' Union has been quietly at work, however, and claims to have made accessions to its membership which now puts the total in the neighborhood of 500. The union claims that its members are still discriminated against and discharged upon slight pretexts by both the Goodrich and Diamond companies, and that they are unable, too, to obtain employment in other local factories if the fact of their being members of the union is known. All of these charges the manufacturers insistently deny. Little is heard of the matter in public, and the only outward demonstration of the existence of the union has been a dance, for the purpose of raising funds on October 17, for which 500 tickets were sold. The Central Labor Union has taken up the cause of the rubber workers and declares that the Goodrich and Diamond companies will be widely advertised as "unfair." Samuel Gompers, president of the American Federation of Labor, has also been appealed to.

The rubber manufacturers say that they have no cause for uneasiness in the union matter, and that the flurry of September, when the alleged differences were made the subject of newspaper articles, is a closed incident. The factories are all busy and, to all appearances, the workmen are for the most part glad that the likelihood of an open rupture with the employers has passed. The Central Labor Union has declared that manufacturers have sought to avoid difficulties by quietly advancing wages. Of this a leading employer said:

"We have advanced wages no more than usual. There are constant changes in the payroll. As men grow in ability their wages are increased. We deal with the individual in this matter."

In this last sentence the general attitude of the manufacturers seems to be embodied. They want to be able to discriminate between the good, steady workman and the careless or indifferent class. They insist that in the rubber business no roomful of men can be put on an entirely equal footing, and in fairness to the men and themselves no entirely uniform scale of wages could be made. One man becomes so skilled that in his hands no goods are spoiled. Another will ruin or injure work in the process of manufacture, frequently.

* * *

THE present condition of the solid vehicle tire business is regarded as critical by many rubber manufacturers and presents a subject of deep interest. At least two-thirds of the solid tires used in the United States are manufactured in Akron. Four of the manufacturers confine their business almost exclusively to this line, while with others it constitutes an important department.

When the Rubber Tire Wheel Co., of Springfield, Ohio, now the Consolidated Rubber Tire Co., of New York, first put solid tires on the market, they came to Akron to have them manufactured, and, for years The B. F. Goodrich Co. were the exclusive makers. The product made Akron famous for solid rubber tires. Other manufacturers took up the work and the business spread. New concerns started up and rubber manufacturers already established added this to their line of products. The royalty exacted by the Consolidated Rubber Tire Co., under the Grant patent, made it possible for others to furnish tires at a lower cost and still maintain a good standard of quality.

On May 6, 1902, the United States circuit court of appeals, at Cincinnati, handed down a decision declaring the Grant patent void. Had the decision been otherwise, infringing manufacturers would have been liable for heavy damages; hence there was great rejoicing and a general feeling of relief. Now that the situation has had time to crystalize, the full force of open competition is being felt. Prices have been gradually coming down, and, before the recent conventions of carriage makers, had reached a point below which they could not go without either sacrificing all the profit or deteriorating the quality. At these conventions it was demonstrated that the carriage makers are the arbiters of the situation. They make the price, and it only remains for the tire manufacturers to furnish the goods that fit. At the present time carriage makers are at a disadvantage because they have not yet had an opportunity to discover the "psychological point" at which quality ends and prices commence.

There are clearly two courses open to manufacturers of solid tires, neither of which is very satisfactory. To keep up the standard of quality means a comparatively high selling price, and necessarily a serious curtailment of business for the present, at least. On the other hand, to meet the present low prices will compel manufacturers to furnish very much poorer tires, which cannot help but prove a disappointment both to seller and buyer. As a natural result the tire manufacturers who adopt this course will suffer for a condition created by the carriage manufacturers in their attempt to buy tires at a price which will not secure the quality to which they have been accustomed and which they expect to receive. One of the causes of the present condition may be found in the fact that the present facilities for manufacturing solid rubber tires are at least four times as great as the consumption. According to a leading Akron manufacturer the business now offers no inducement to capital and we may expect soon to see an end to the organization of new companies to make solid rubber vehicle tires.

Akron rubber manufacturers are making plans for liberal representation at the motor vehicle and carriage shows the coming season.

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At the annual meeting of the Diamond Rubber Co. on October 14, all directors and officers were reelected. The latter are: W. B. Hardy, president; A. H. Marks, vice president and superintendent; W. B. Miller, secretary; A. H. Noah, treasurer. The business of the company, it is understood, has been most satisfactory the past year, both here and abroad.

The Combination Tire Co., lately incorporated under New York laws, completed their organization here on October 13. The officers are: Thomas Clark, of New York, president; W. R. Harris, of Akron, vice president; W. B. Tuttle, of Akron, secretary and treasurer. Mr. Harris is the inventor of the tire to be manufactured. This tire is fastened to the rim by means of "T's" and transverse wires, doing away with the channel iron. The company will make their rubber goods, having leased a brick building at Main street and Buchtel avenue. The stockholders, with the exception of President Clark, are Akron men. Secretary Tuttle has heretofore been with Taplin, Rice & Co., who manufacture rubber machinery, and Vice President Harris has been with The B. F. Goodrich Co.

The plant of The India Rubber Co. was shut down three days early in October to permit of repairs and alterations. This was the first time that an Akron rubber factory had been closed, except for holidays and Sundays, for more than two years. The India Rubber Co. are now working night and day.

Although a number of rubber men were aspirants for the championship of the Portage Golf Club this season, the hand-

some cup offered by Mr. R. P. Marvin and the championship as well, again go outside the rubber business, E. E. Andrews, secretary of the Akron Electrical Manufacturing Co., winning the distinction and prize. Mr. Andrews and Secretary Charles W. Seiberling, of the Goodyear Tire and Rubber Co., spent the latter part of October hunting in northern Michigan.

A. G. Lyon, A. D. Logan, and J. T. Diehm, of Akron, are the active men in the Lyon Rubber Co., lately converted from a partnership into a corporation, and which evidently is building up a prosperous business. Mr. Diehm is president, Mr. Lyon vice president, and Mr. Logan secretary and treasurer.

Mr. James A. Swinehart, vice president of the Firestone Tire and Rubber Co., sailed from New York on October 7 to visit France, in the interest of the Colonial Tire and Rubber Co., who control the Swinehart tire patents in continental Europe. He was accompanied by Mr. P. D. Hall, of the Colonial company.

Letters from Mr. H. C. Corson, formerly vice president of the B. F. Goodrich Co. and still a member of their advisory board, state that he and Mrs. Corson will spend the winter near Cape Breton, Nova Scotia. Mr. Corson has built for the people about his house there a handsome chapel.

President O. C. Barber, of the Diamond Match Co., is interested in the North Western Rubber Co., Limited, of Liverpool, Edgland, which is pushing the Diamond Rubber Co. of Glasgow, Scotland, mentioned in the October INDIA RUBBER WORLD. Mr. Barber, who recently returned from Europe, says that the American rubber trade is extending to all European countries. The North Western company are largely controlled by stockholders of the Diamond Rubber Co. of Akron.

Rabbi Isador Philo, of the Reformed Hebrew congregation of Akron, is an honorary member of the rubber workers' union and attends the meetings regularly. The union have promised to nominate him for mayor next spring and there is some talk that the local labor unions will combine to support him as an independent candidate for that office.

Mr. Harry K. Raymond, a department manager of The B. F. Goodrich Co., and Miss Gertrude Mason, daughter of F. H. Mason, general manager of the works of the Goodrich company, will be married in the First Congregational church on November 5. A handsome home is being remodeled for them at Union and Forge streets.

Colonel George T. Perkins, president of The B. F. Goodrich Co., was elected president of the Reunion Association of the 105th Ohio Volunteer Infantry regiment at its meeting in Chardon, Ohio, October 17. Colonel Perkins has held this position for years, the veterans having great pride in him.

The engagement is announced of Mr. Francis R. Peabody, superintendent of the South Akron factory of The Diamond Rubber Co., and Miss Ethel Wright, of Akron.

The Canton Rubber Co., at Canton, Ohio, whose management is largely in the hands of former Akron men, is reported to be doing an excellent business in dipped goods.

THE RUBBER TRADE AT TRENTON.

BY OUR RESIDENT CORRESPONDENT.

TO THE EDITOR OF THE INDIA RUBBER WORLD: Three local rubber manufacturing companies have increased the wages of their employes 5 per cent. On September 30 the United and Globe Rubber Manufacturing Cos. announced a general increase of 5 per cent. to take effect from September 26. On October 8 the Whitehead Brothers Rubber Co. posted a notice in its mill of a similar advance, to take effect from October 3. On October 18 a general increase of 5 per cent. was announced

by the Empire Rubber Manufacturing Co. In each instance the increase was voluntary and gave much satisfaction to the employes.

Some of the mill hands claim that the advance will extend to all the local mills soon, and that the voluntary raise is a diplomatic move on the part of the manufacturers to prevent any defection in the ranks of their employes when the completion of the new Eureka mill will make a sudden and unusual demand for rubber workers.

The Empire Rubber Manufacturing Co. are building two additions to their plant—a one-story brick structure 70 × 50 feet, and a two-story brick building 100 × 50 feet—to increase the capacity of the rubber carriage cloth department.

The United and Globe Rubber Manufacturing Cos. are making further improvements at their mills. A steam heating plant is being installed in the new office building, to supply which a new 500 H. P. horizontal return tubular boiler has been put in. A new dust house has been built, 80 feet from the factory, into which all dirt and refuse from the old rubber is blown by steam fans through 12 inch pipes. A new hydraulic pump capable of producing 3000 pounds pressure, and seven De Laski looms for cotton hose have been installed.

Frank W. Thurman, New York manager for the Crescent Belting and Packing Co., has opened a retail rubber store at No. 7 South Warren street, this city. It is attractively fitted up and is well stocked with all kinds of wearing apparel, druggists' sundries, and mechanical goods. It is the only exclusive rubber store in this city. During Mr. Thurman's absence in the metropolis Mrs. Thurman attends to the business.

The officials of the new Union Rubber Co. are now fully established in elegantly appointed offices in the Broad Street National Bank building. The company are busy getting out samples.

Further improvements are being made at the factory of the Home Rubber Co. Two new return tubular boilers of 130 H.P. each have been installed, and the boiler and engine room is being enlarged and partially reconstructed. When completed it will measure 40 × 40 feet. The boilers were built by the John E. Thropp & Sons Co., of this city.

The Modern Rubber Manufacturing Co. are erecting a new factory to replace the one destroyed by fire in September. The main building will be a one story frame structure 60 × 30 feet; the engine room 25 × 38 feet, and the new reclaiming building 24 × 30 feet. The engine and boiler were not seriously damaged by the fire and will be used for operating the new plant. The company expect to be running by December 1. Enough orders have been booked to keep the mill running for six months. Since the fire, through the courtesy of the Whitehead Brothers Rubber Co. in allowing the use of factory facilities, the Modern company have been able to fill their more pressing orders.

The Trenton Rubber Manufacturing Co.'s "Black Bear" packing, first put upon the market last spring, has proved a splendid seller, giving satisfaction to steam fitters and engineers generally.

The Farrier Hoof Pad Co. organized lately to manufacture a new rubber hoof pad, has met with such success in selling this article that work has to be pushed night and day to fill orders.

In the Mercer court, on October 20, Justice Mahlon Pitney suspended sentence upon Thomas Edward Taylor, aged 18, who had been convicted of manslaughter on the charge of killing Edward Hyde, another youth, while they were working together in the factory of the Trenton Rubber Manufacturing Co. Taylor will be on probation for an indefinite period, and his light sentence is due to mitigating circumstances.

ARTISTIC CABINETS OF HARD RUBBER.

THERE are in bonded warehouses in New York to-day, two cases containing samples of art work, of which hard rubber is a part, that undoubtedly point to a line of work that will some day be quite a factor in the rubber manufacture. A French artist is the creator of these, and the inventor of the vulcanite finish. These goods are samples of mural decorations, statuettes, busts, beautifully carved panels for cabinets, etc. They are made from terra cotta, *papier mache*, and cheap materials of various kind, over which by a secret process is put a very thin coating of hard rubber in any color, giving most



beautiful and durable effects. The rubber coating being very thin, there is of course very little addition to the cost, and a great increase in both the durability and beauty. The samples embrace several doors from the beautiful cabinet shown in the above illustration, and have all the effect of black oak. Of the busts shown on the top of this cabinet, the one in the middle is made by the new process. These goods are in the charge of Mr. Reuben Allerton, of New York, who imported them as samples of a new art, and who plans to arrange for their manufacture in the United States.

FIRE HOSE STATISTICS OF CITIES.

AMONG the numerous subjects on which statistics are compiled by the United States department of labor, at Washington, is the comprehensive one of "Statistics of Cities," embracing almost no end of particulars. For several years past these statistics have included the details relating to the amount of hose and other fire department equipment in cities having 30,000 population or more. The number of cities embraced in this table is not the same every year, for the reason that before the last census some cities which were supposed to have 30,000 inhabitants were found later not to have. But this fact is not important, since the total amount of hose cred-

ited to the cities in doubt does not aggregate 100,000 feet. The total number of feet reported is as follows:

January 1, 1899.....	140 cities.	3,361,160 feet.
January 1, 1900.....	129 cities.	3,176,902 feet.
January 1, 1901.....	135 cities.	3,413,011 feet.
January 1, 1902.....	137 cities.	3,451,881 feet.

No particulars are given as to the basis of estimating the amount of rubber hose for each fire department. For instance, in one case may be reported the number of feet of hose "owned" by the city and in another the amount of hose "in service." But whatever the basis of reporting, there is hardly any doubt that in the cities of the class referred to there is something over 3,000,000 feet of fire hose. There is likewise a very large amount of fire hose owned by cities and towns having less than 30,000 population, so that it may not be an extravagant estimate to give 5,000,000 or 6,000,000 as the total of fire hose in use in the United States. This estimate would call for at least 1,000,000 feet of new hose for replacements every year, without reference to the increase of equipment in many departments.

Headquarters, Fire Department City of New York,
Chief of Department.

BOROUGH OF MANHATTAN, October 1, 1902.

TO THE EDITOR OF THE INDIA RUBBER WORLD: In reply to your favor which has been referred to me for report. I would state that the average life of fire hose in use in this department is from 5 to 6 years.

Yours respectfully,

EDWARD F. CROKER,
Chief of Department.

TO THE EDITOR OF THE INDIA RUBBER WORLD: The question has been propounded to me: "If a particular city has 100,000 feet of hose of all kinds in use to-day, about what would be the annual replacements necessary to keep the equipment up to this size?" Such a question can be more readily answered by a comparison of fire department statistics that state the average amount of hose pur-

chased per annum, and the aggregate amount in service, than from the experience of a fire hose manufacturer.

There are so many conditions that affect the durability of fire hose, even if the all important consideration of quality be ignored, that it is difficult to establish an average for replacements, unless a careful study of the statistics referred to may permit it to be done.

For instance, an equipment of 100,000 feet may be ample to require but a reasonable service and afford a sufficient reserve; or it may be so inadequate that the service of the hose is much more frequent and severe. One department may give the hose better care than another, may better protect from injury from vehicular traffic while in the streets, may use it chiefly on smooth pavements. One department may have to protect a city largely residential, while another may have the protection of a manufacturing or commercial community where fires are likely to be larger and more frequent, and the liability of hose to come into contact with chemical and other injurious substances greatly increased.

If two departments whose hose needs are about equal, should expend an equal sum of money annually in the purchase of fire hose for say a period of twelve years, and each should use the hose until destroyed while in service, the one to purchase high grade hose and the other a low grade, it is probable that at the

end of the period named, the department purchasing the better grade will have a greater number of feet of reliable hose in service, and will during the period have had a more effective service by reason of less bursting of hose while in fire service, than the department that purchased a greater number of feet of poorer hose.

EUREKA FIRE HOSE CO.,

Jersey City, N. J., October 16, 1902.

B. L. SROWN, Vice President.

THE TEXTILE GOODS MARKET.

OCTOBER marked the beginning of new yearly relations between the rubber and textile industries in this country. As stated in the last INDIA RUBBER WORLD, manufacturers of rubber goods were placing their annual contracts for cotton duck, and in nearly every instance these new engagements had been for supplies at fully 25 per cent. increase over those for the previous year. It was observed at that time, however, that certain manufacturers did not entertain the same confidence in the high level of prices which the United States Cotton Duck Corporation was asking, and refused to renew their contracts on the basis suggested. Since then these manufacturers have been in the market again, and have endeavored to make better terms, but, so far as can be ascertained, without success. Although the government report of the raw cotton crop for October was anything but encouraging to such an argument, these buyers clung tenaciously to the idea that cotton would decline and that ducks would be compelled to follow. Their views have proved to be true in a measure, for since then raw cotton has been easing off somewhat and is to-day quoted at 8.70 cents against 9 cents a month ago.

Textile manufacturers, however, hold to the argument that finished cloth will show no depreciation for many months to come, and, occupying a rather independent position, stand firmly for prices. Such rubber manufacturers as do not agree with them declare that they will pursue a hand-to-mouth policy throughout the year before they will renew their contracts upon the basis proposed by the Cotton Duck trust. One concern, in particular, placed an order last week for several hundred rolls which they calculated would carry them over to the new year, but the price paid for the goods was 3½ cents a pound more than they would have been compelled to pay had they made a yearly contract. This concern has now decided to try the experiment of buying from hand-to-mouth, according to their requirements, entertaining some doubt about the alleged advantage in making a yearly contract even at lower prices. In the latter case it is said that the consumer is asked to comply with certain requirements which in a year make his goods cost him as much as though he had bought in small quantities at a higher figure.

The manufacturers of stitched belting have been in the market during the past month and have bought quite freely of the heavier grades of duck. This branch of the trade is competing with the rubber belt manufacturers for the belting trade, and have become a very formidable patron of the cotton duck manufacturers. They consume a very heavy weight duck, and, although they do not all make yearly engagements, are allowed special rates on their purchases.

Many of the manufacturers of rubber boots and shoes have been making inquiry during the past month concerning the condition of brown sheetings and osnaburgs, preparatory to placing their orders for linings. Some have already bought quite heavily, although they would have increased their orders had they not hoped to see the price of cotton sheetings decline in the near future. Prices have not advanced since October 1; current rates are held firmly at the following basis per yard:

Forty inch, 2.50.....	6¼ cents.
Forty inch, 2.70.....	6 cents.
Forty inch, 2.85.....	5¾ cents.
Forty inch, 3.60.....	4¾ cents.
Thirty-six inch, 3-yard.....	5¼ cents.

The indifference of sellers to doing business on this basis has caused some rubber manufacturers to interpret their action as meaning that advances are contemplated, but there is nothing certain about this. If such a purpose was harbored a month ago it has evidently been dispelled, for nothing has been heard of it lately. In fact the demand from other sources at this time is not of the character to warrant manufacturers in asking more money for their products.

Manufacturers of felts are reporting a largely increased demand for felts of all weights. Manufacturers of overs for the western trade have been placing large orders for felt boots. The lighter weight felts commonly used for lining boots and shoes is in better demand than ever. Like the United States Cotton Duck Corporation, the manufacturers of felts are averse to making prices public, claiming that there is no open market for felts and all purchases are made at private terms.

* * *

THE United States Cotton Duck Corporation is quoting 8-ounce 40-inch flat duck, single filling, at 8 cents, and 10-ounce 40 inch, 10 cents.—Forty-inch, 2.50, 48×48 duck for hose is selling at 6¼ cents at the present time, although an upward tendency is beginning to manifest itself.—Forty-inch, 3.60, 56×60 picking duck is being quoted at 5 cents, and forty-inch, 3.60, 48×48, at 4¾ cents.—Spinners of cotton duck yarns are reported to be well situated so far as orders are concerned, and prices are held firmly on the basis which has ruled the market for some time in the past. Yarns from 12s. to 14s. are held at 16 cents.

RUBBER SCRAP PRICES.

THERE is no change to report since the last issue of THE INDIA RUBBER WORLD. The following are New York quotations—prices paid by consumers:

Old Rubber Boots and Shoes—Domestic.....	7¼ @ 7½
Do —Foreign.....	6½ @ 6¾
Pneumatic Bicycle Tires.....	6
Solid Rubber Wagon and Carriage Tires.....	7
White Trimmed Rubber.....	9½ @ 9¾
Heavy Black Rubber.....	4¼
Air Brake Hose.....	2¼ @ 2½
Fire and Large Hose.....	2½
Garden Hose.....	1½
Matting.....	1

OBITUARY.

HARRY S. PARMELEE, a wealthy manufacturer of New Haven, Connecticut, president of the Fair Haven and Westville Street Railway Co., and president or director in several other corporations, died on September 27, while on a yacht en route for the Bermudas. He was a son of Stephen Thomas Parmelee, who went from a rubber shoe factory in New Brunswick, N. J., in 1857, after having been connected with The L. Candee & Co. (New Haven), to superintend the manufacture of rubber boots and shoes for the North British Rubber Co., Limited, of Edinburgh, Scotland. Stephen Parmelee returned to America in 1859. An elder son, Louis, died in the civil war, at the battle of Antietam. Harry Parmelee served through the civil war in the First Connecticut cavalry and lost an arm before Richmond. He is survived by a widow, two daughters, and a son, Henry F. Parmelee, a New Haven attorney.

REVIEW OF THE CRUDE RUBBER MARKET.

AFTER a month of fluctuation the crude rubber market closes firm, at an advance over the quotations in our last issue, with an apparent upward tendency. Manufacturers have been fair buyers. While the sales have not been of large amounts, the ordinary requirements make up a considerable aggregate. There is a growing tendency among manufacturers to divide their purchases throughout the year. Some large consumers decline to buy beyond a certain limit, no matter what inducement in the way of prices may offer. Then the practice of drying rubber for a long time, making it necessary for orders to be placed months ahead, is being abandoned. With rubber constantly reaching the market; with so many houses in position to supply rubber; with cable communication between all rubber centers; with the shorter term for drying rubber and manufacturers less disposed to be speculative purchasers—large buying orders, in the old sense, are becoming less and less general.

Receipts at Pará thus far are short. The outlook for the season is a matter of doubt, though smaller receipts throughout are generally predicted. The unsettled condition of the Acre district, in Bolivia, is likely to stop the export of rubber from that quarter—2000 or 3000 tons—for some time to come. In some other districts fewer boats and fewer supplies have gone out than last year, on account, as reported, of continued unfavorable trade conditions. This is not a certain basis for predictions, however; last season opened with calamity stories all along the Amazon, yet more rubber was marketed than ever before.

Reduced production of Pará will not necessarily advance prices. Consumption remains large in the United States, but the rubber industry has ceased to expand at the same rate in Great Britain, and the depressing effect of recent business conditions in Germany has not yet been wholly overcome. A reduced consumption in Europe, therefore, offsetting a reduced output from the Amazon, would leave the situation of supply and demand unchanged. There is no prospect of larger production of rubber elsewhere. Smaller supplies are coming forward from many districts in Africa. Arrivals at Antwerp, though still large, were 698 tons smaller during the first nine months of this year than for the same period of 1901, and 556 tons smaller than for the first nine months of 1900. The failure of some of the Congo companies to make expected profits has checked the extension of rubber gathering, and some other companies have determined not to attempt to enlarge their output for a while, but rather to improve its quality.

The unusually large sales at Antwerp late in September were mostly for American account. Such liberal purchases, at advanced prices, with quotations for coarse Pará still under what lately would have been called normal, indicate a healthy condition of demand in the United States and a lack of confidence that prices may be lower in the near future.

New York quotations on October 31 were:

PARÁ.		AFRICAN.	
Islands, fine, new....	72 @73	Tongues.....	43 @44
Islands, fine, old....	@	Sierra Leone, 1st quality	65 @66
Upriver, fine, new....	78 @79	Benguella.	49 @50
Upriver, fine, old....	81 @82	Cameroon ball.....	44 @45
Islands, coarse, new....	47 @48	Flake and lumps.....	32 @33
Islands, coarse, old....	@	Accra flake.....	17 @18
Upriver, coarse, new....	62 @63	Accra buttons.....	48 @49
Upriver, coarse, old....	@	Accra strips.....	51 @52
Caucho (Peruvian) sheet	52 @53	Lopori ball, prime....	66 @67
Caucho (Peruvian) ball	56 @57	Lopori strip, do . . .	59 @60

Madagascar, pinky....	@70	CENTRALS.	
Madagascar, black	@	Esmeralda, sausage....	54 @55
EAST INDIAN.		Guayaquil, strip.....	53 @53
Assam.....	53 @54	Nicaragua, scrap....	53 @54
Borneo.....	33 @44	Mangabeira, sheet....	44 @45

Late Pará cables (October 29) quote:

Per Kilo.		Per Kilo.	
Islands, fine.	4\$450	Upriver, fine.....	5\$300
Islands, coarse.....	2\$350	Upriver, coarse.....	3\$800

Exchange, 12 $\frac{1}{2}$ d.

Last Manáos advices (October 29):

Upriver, fine.....	5\$275	Upriver, coarse.	3\$275
Exchange, 12 $\frac{1}{2}$ d.			

NEW YORK RUBBER PRICES FOR SEPTEMBER (NEW RUBBER).

	1902.	1901.	1900.
Upriver, fine.....	74 $\frac{1}{2}$ @78	87 @91	99 $\frac{1}{2}$ @1.03
Upriver, coarse.....	59 @62	65 @66	70 @72
Islands, fine....	71 @75	84 @88	95 $\frac{1}{2}$ @99
Islands, coarse.....	46 @48	48 @50	55 @58
Cametá, coarse.....	47 @50	50 @51	56 @57 $\frac{1}{2}$

Statistics of Para Rubber (Excluding Caucho).

	NEW YORK.		Total 1902.	Total 1901.	Total 1900.
	Fine and Medium.	Coarse.			
Stocks, August 31.....	214	7 = 221	523	566	609
Arrivals, September.....	591	306 = 897	500	609	
Aggregating.....	805	313 = 1118	1023	1175	
Deliveries, September....	613	307 = 920	537	725	
Stocks, September 30..	192	6 = 198	486	450	

	PARÁ.			ENGLAND.		
	1902.	1901.	1900.	1902.	1901.	1900.
Stocks, August 31.....	97	190	255	1525	980	1200
Arrivals, September..	1610	1850	1235	719	645	310
Aggregating.....	1737	2040	1490	2244	1625	1510
Deliveries, September.	1651	1790	1032	969	600	650
Stocks, Sept. 30..	86	250	458	1275	1025	860

	1902.	1901.	1900.
World's supply, September 30.....	2595	2797	2664
Pará receipts, July 1 to September 30.....	3062	4112	3188
Pará receipts of Caucho, same dates.....	368	283	242
Afloat from Pará to United States, Sept. 30..	420	408	270
Afloat from Pará to Europe, September 30...	616	628	240

Hamburg.

TO THE EDITOR OF THE INDIA RUBBER WORLD: While the Hamburg rubber market as a whole has not shown any marked improvement of late, there has been a firmer situation with regard to middle sorts, in spite of the fluctuating prices for Pará. A more lively condition has asserted itself in our market for Africans, caused principally by brisk inquiries for future delivery from the United States. There has also been evident an increased inclination to buy, not only in Germany but on the rest of the continent. During the past week there has been a demand particularly for Mozambique balls and thimbles, red Massai, Gambia niggers, Batanga and Kamerun balls, Peruvian, and Santos and Bahia sheets. The sorts neglected have been Accra balls, Adeli balls, red and black thimbles, Matto Grosso, and West India scrap and strip. The following prices have been paid—in marks per kilogram:

Pará fine, hard cure, November delivery	7.25@7.30
Pará medium, hard cure, November delivery ..	7.05@7.10
Manáos Negroheads, November delivery.....	7.75@5.80
Mozambique ball, "Donde," finest.....	6.75@6.80

Mozambique ball, "Mahenge," finest.....	6.55@6.60
Do "Mohorro,".....	6.45@6.50
Do Do fine red.....	5.90@5.95
Do "Nyassa," finest.....	5.95@6.00
Do Do good.....	5.80@5.90
Mozambique spindles, fine, freed from wood.....	6.10@6.15
Massai niggers.....	6.00@6.10
Gobian niggers.....	4.90@4.95
Batanga balls, small.....	4.15@4.17
Santos sheets.....	4.80@4.85
Bahia sheets.....	3.75@3.80
Pernambuco, Mangabeira.....	3.55@3.60

Hamburg, October 18, 1902.

London.

EDWARD TILL & Co., under date of October 1, report stocks:

	1902.	1901.	1900.
LONDON { Para sorts.....	128	134	219
{ Assam and Rangoon.....	12	87	33
{ Other sorts.....	361	481	617
Total.....	501	702	869
LIVERPOOL { Para.....	1273	1024	866
{ Other sorts.....	690	1076	1111
Total, United Kingdom.....	2464	2802	2846
Total, August 1.....	3053	2944	3645
Total, July 1.....	3595	3128	3653
Total, June 1.....	3687	3502	3624
Total, May 1.....	3788	3597	3952
Total, April 1.....	3326	3522	3104

PRICES PAID DURING SEPTEMBER.

	1902.	1901.	1900.
Para fine.....	3/1 1/2 @ 3/4	3/7 @ 3/9 1/2	4/1 @ 4/4 1/2
Negroheads, scrappy.....	2/7	2/8 @ 2/9	2/11 @ 3/0 1/2
Do Islands.....	1/11 1/2	2/0 1/2	2/4
Bolivian.....	3/1 1/2 @ 3/4	3/9	4/2 1/2 @ 4/4

OCTOBER 17.—Para market firm and small sales of fine hard at 3s. 2 1/2 d. for new; 3s. 3 d. for old. Nearest value soft cure 3s. 1/2 d.; negroheads 1s. 11 1/2 d.; Cameté 2s. Scrappy scarce, 2s. 7 1/2 d. Peruvians steady—2s. 6 1/2 d. for ball; 2s. 7 1/2 d. for sausage; and 2s. 2 1/2 d. for slab. Mollendo held for 3s. 1 1/2 d. Bolivian, 3s. 3 d. buyers.—At auction to-day 34 packages Ceylon (from Para seed) offered and sold. Fine clean, 3s. 10 d. @ 3s. 10 1/4 d.; fair scrap, 2s. 3 d. @ 2s. 4 d.; fair lump, 2s. 7 d.; heated ditto, 2s. 2 1/2 d.—Mozambique.—The good supply of 809 bags offered and 260 sold. Good red ball, 2s. 7 1/2 d.; weak white, 2s. 2 d. @ 2s. 3 d.; baky unripe, 1s. 3 1/2 d.; sausage fair to good clean stickless, 2s. 7 1/2 d. @ 2s. 7 1/2 d.; low sandy pickings, 1s. 2 d.

Antwerp.

TO THE EDITOR OF THE INDIA RUBBER WORLD: At the inscription sale of September 23, 760 tons of rubber were exposed, of which 663 tons were sold at very full prices, showing an average advance of 6 1/2 per cent on valuation—i. e., on values of the preceding sale. The buying was general, including large orders for the United States. The total sales during September amounted to 770 tons, leaving stocks at the end of the month of 457 tons.

At the next sale, on October 28, 400 tons of various Congo sorts will be exposed. Among the principal lots offered will be the following, with their valuation:

15 tons Loporé I.....	francs 7.25
43 " Loporé I.....	6.50
44 " Upper Congo mixed with Loanda and Aruwimi.....	7.02 1/2
14 " Upper Congo small strips.....	5.80
28 " Uelé strips.....	5.95
16 " Aruwimi.....	5.75
11 " Upper Congo, small black sausage.....	6.00
9 " Mongalla strips.....	6.75
10 " Kwango-Loanda.....	6.00
17 " Lower Congo thimbles.....	2.40
35 " Lake Leopold II, inferior.....	5.00
7 " Lake Leopold II, better quality.....	6.30

12 tons Wamba red thimbles.....	2.90
10 " Wamba red thimbles.....	3.20

C. SCHMID & CO.

Antwerp, October 13, 1902.

Cable advices report that the rubber offered on the 28th was practically all sold, at an average advance over previous quotations of about 2 cents per pound. A good share of the buying was for the United States.

ANTWERP RUBBER STATISTICS FOR SEPTEMBER.

DETAILS.	1902.	1901.	1900.	1899.	1898.
Stocks, Aug. 31.....	756,401	684,355	1,056,124	400,432	144,526
Arrivals, September.....	470,084	887,256	417,050	232,517	192,531
Congo sorts.....	429,855	871,360	359,232	230,123	147,871
Other sorts.....	40,229	15,896	57,818	2,394	44,660
Aggregating.....	1,226,485	1,571,611	1,473,174	632,949	337,057
Sales in September.....	769,774	675,468	468,412	325,407	110,183
Stocks, Sept. 30.....	456,711	896,143	1,004,762	307,482	226,874
Arrivals since Jan. 1.....	4,028,920	4,726,126	4,584,468	2,628,387	1,415,479
Congo sorts.....	3,725,404	4,382,856	3,866,145	2,324,760	1,205,671
Other sorts.....	303,516	343,270	718,323	303,618	209,808
Sales since Jan. 1.....	1,986,918	4,443,932	3,871,697	2,584,245	1,283,068

RUBBER ARRIVALS AT ANTWERP.

SEPT 16.—By the *Albertville*, from the Congo:

Bunge & Co.....	(Société Générale Africaine) kilos	93,000
Do.....	(Société Anversoise)	69,000
Do.....	(Comité Spécial Katanga)	2,600
Do.....	(Société Isanghi)	7,000
Do.....	(Sultanats du Haut Oubanghi)	150
Do.....	(Plantations Lacourt)	23,000
Société A B I R.....		45,000
Comptoir Commercial Congolais.....		17,000
Société Coloniale Anversoise.....	(Société "La Djuma")	11,000
Do.....	(Belge du Haut Congo)	2,000
Do.....	(Cie. de Lomami)	15,000
Do.....	(Süd Kamerun)	3,000
Do.....	(Société La Lulonga)	4,000
L. & W. Van de Velde.....	(Cie. du Kassai)	13,000
Cie. Commerciale des Colonies.....		3,000
Do.....	(Kassalenne)	1,700
Comptoir Commercial Anversois.....	(Société Ibenga)	1,200
Ch. Dethier.....	(La Haute Sangha)	21,000
W. Mallinckrodt & Co.....	(Alimaïenne)	6,000
		337,550

IMPORTS FROM PARA AT NEW YORK.

[The Figures Indicate Weights in Pounds.]

October 1.—By the steamer *Dunsford*, from Manáos and Pará:

IMPORTERS.	Fine.	Medium.	Coarse.	Caucho.	Total.
Reimers & Co.....	66,800	33,700	55,400	....	155,900
New York Commercial Co.....	40,200	6,800	35,100	1,800	83,900
Ed. Reeks & Co.....	54,400	7,100	5,300	....	66,800
A. T. Morse & Co.....	15,400	2,700	49,100	....	67,200
United States Rubber Co.....	....	....	22,700	....	22,700
Boston Rubber Shoe Co.....	....	....	11,400	....	11,400
Goodyear Rubber Co.....	....	....	7,600	....	7,600
William Wright & Co.....	3,900	....	10,600	....	10,600
Total.....	180,700	50,300	197,200	1,800	430,000

October 7.—By the steamer *Finance*, from Mollendo:

New York Commercial Co.....	14,000	14,000
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October 10.—By the steamer *Maranhense*, from Manáos and Pará:

New York Commercial Co.....	64,800	24,600	102,900	600	192,900
A. T. Morse & Co.....	59,800	12,400	37,700	300	110,200
Reimers & Co.....	33,300	14,700	19,500	10,900	78,400
United States Rubber Co.....	....	....	22,800	....	22,800
Boston Rubber Shoe Co.....	....	....	11,400	....	11,400
Ed. Reeks & Co.....	8,100	2,300	1,000	....	11,400
William Wright & Co.....	....	....	6,900	....	6,900
Total.....	166,000	54,000	202,300	11,800	434,000

October 20.—By the steamer *Hilary*, from Manáos and Pará:

A. T. Morse & Co.....	81,800	10,700	38,600	....	131,100
New York Commercial Co.....	27,400	5,600	39,200	....	72,200
Reimers & Co.....	18,600	2,200	27,600	....	48,400

Hagemeyer & Brunn.....	12,200	13,200	10,800	.....=	36,200
United States Rubber Co.	5,400	400	23,200	.....=	29,000
Boston Rubber Shoe Co..	2,500	300	11,400	.....=	14,200
William Ward & Co.....	2,900	300	18,200	300=	21,700
American Hard Rubber Co	.....	.....	6,900	.....=	6,900
G. Amsinck & Co.....	1,100	1,400	200	900=	3,500

Total.....151,900 34,100 176,100 1,200= 363,300

October 17.—By the steamer *Cumbal*, from Mollendo:

New York Commercial Co.	9,300	.....	1,300	.....=	10,600
J. W. Parr's Sons	5,500	.....	2,200	.....=	7,700

Total.....14,800 3,500 18,300

October 22.—By the steamer *Cearense*, from Manaus and Pará:

A. T. Morse & Co.....	107,200	24,500	73,600	.....=	204,300
Reimers & Co.....	43,300	15,300	61,700	.....=	120,300
New York Commercial Co.	71,600	12,400	16,400	300=	100,700
United States Rubber Co.	44,400	8,000	34,400	.....=	86,800
Boston Rubber Shoe Co..	5,400	2,000	12,900	.....=	20,300
Edmund Reeks & Co.....	15,100	2,400	2,400	.....=	19,900
H. A. Gould & Co.....	5,000	700	1,900	.....=	7,600
William Wright & Co.....	.....	.....	9,500	.....=	9,500
Hagemeyer & Brunn.....	.....	.....	1,300	2,700=	4,000
Total.....	292,000	65,300	213,100	3,000=	573,400

[NOTE.—The steamer *Horatio* from Pará was due at New York on November 1, with 330 tons of rubber.]

PARA RUBBER VIA EUROPE.

SEPT. 25.—By the *Majestic*=Liverpool:
George A. Alden & Co. (Fine)..... 18,500
Reimers & Co. (Fine)..... 3,500 22,000

SEPT. 25.—By the *Patricia*=Hamburg:
A. T. Morse & Co. (Coarse)..... 5,000

SEPT. 29.—By the *Etruria*=Liverpool:
Reimers & Co. (Fine)..... 70,000
Reimers & Co. (Coarse)..... 34,000
George A. Alden & Co. (Fine)..... 11,000
George A. Alden & Co. (Coarse)..... 4,000 119,000

OCT. 4.—By the *Campania*=Liverpool:
United States Rubber Co. (Fine)..... 23,000
William Wright & Co. (Fine)..... 9,000
Reimers & Co. (Coarse)..... 6,000
George A. Alden & Co. (Coarse)..... 4,000 42,000

OCT. 4.—By the *Philadelphia*=London:
Reimers & Co. (Coarse)..... 48,000
A. T. Morse & Co. (Coarse)..... 3,000 48,000

OCT. 13.—By the *Umbria*=Liverpool:
A. T. Morse & Co. (Coarse)..... 17,000

OCT. 18.—By the *Lucania*=Liverpool:
Reimers & Co. (Fine)..... 24,000

OCT. 23.—By the *Majestic*=Liverpool:
United States Rubber Co. (Fine)..... 28,000

OTHER ARRIVALS AT NEW YORK

CENTRALS.

SEPT. 23.—By the *Tennyson*=Bahia, etc.:
J. H. Rossbach & Co..... 63,000
G. Amsinck & Co..... 6,500 71,500

SEPT. 27.—By the *Esperanza*=Mexico:
F. Probst & Co..... 1,500
E. Steiger & Co..... 1,200
Harburger & Stack..... 500
H. Marquardt & Co..... 700
American Trading Co..... 500
E. N. Tibbals & Co..... 200
For Europe..... 1,200 5,800

SEPT. 25.—By the *Patricia*=Hamburg:
Reimers & Co..... 7,500

SEPT. 30.—By the *Alliance*=Colon:
G. Amsinck & Co..... 1,100
E. Schiefelin & Co..... 1,100
E. B. Strout..... 800
Jimenez & Escobar..... 700
Gillespie Bros. & Co..... 600
Lawrence Johnson & Co..... 600
Kunhardt & Co..... 600
W. R. Grace & Co..... 500
Joseph Hecht..... 400
A. T. Morse & Co..... 300 6,700

OCT. 2.—By the *El Cid*=New Orleans:
Manhattan Rubber Mfg. Co..... 4,000
A. T. Morse & Co..... 2,500
Eggers & Heinlein..... 1,000
G. Amsinck & Co..... 900
A. N. Rotholz..... 200 8,600

OCT. 4.—By the *Vigilante*=Mexico:
F. Probst & Co..... 1,500
Harburger & Stack..... 1,200
H. Marquardt & Co..... 800
J. B. & J. M. Cornell..... 300
A. E. Outerbridge..... 2,500 6,000

OCT. 7.—By the *Coleridge*=Bahia:
J. H. Rossbach & Co..... 16,000
Eggers & Heinlein..... 3,000 19,000

OCT. 7.—By the *Finance*=Colon:
A. Santos & Co..... 7,900
American Trading Co..... 4,300

CENTRALS—Continued.

Hirzel, Feitman & Co..... 8,300
G. Amsinck & Co..... 3,100
Eggers & Heinlein..... 2,200
Dumarest & Co..... 1,600
Frame, Alston & Co..... 1,300
D. N. Carrington & Co..... 1,000
W. R. Grace & Co..... 700
L. N. Chemedlin & Co..... 600 30,900

OCT. 3.—By the *Athos*=Greystown, etc.:
E. B. Strout..... 4,200
A. D. Straus & Co..... 3,500
Livingston & Co..... 2,500
G. Amsinck & Co..... 700
Lawrence Johnson & Co..... 500
Samper & Co..... 2,500
J. H. Rossbach & Bros..... 2,000
Roldan & Van Sickle..... 200
For London..... 4,500 20,600

OCT. 8.—By the *Graf Waldersee*=Hamburg:
Reimers & Co..... 7,800

OCT. 11.—By the *Monterey*=Mexico:
E. Steiger & Co..... 1,500
Thebaud Brothers..... 1,000
Graham, Hinkley & Co..... 1,000
For Hamburg, etc..... 5,500 9,000

OCT. 14.—By the *Atlas*=Cartagena, etc.:
Isaac Brandon & Bros..... 2,500
Kunhardt & Co..... 2,500
Lawrence Johnson & Co..... 500 5,500

OCT. 14.—By the *Segurana*=Colon:
American Trading Co..... 9,300
Eggers & Heinlein..... 4,000
Isaac Brandon & Bros..... 3,400
Hirzel, Feitman & Co..... 5,100
G. Amsinck & Co..... 1,900
Jimenez & Escobar..... 1,700
Kunhardt & Co..... 1,000
Andreas & Co..... 1,000
Harburger & Stack..... 500
D. N. Carrington & Co..... 500 25,400

OCT. 17.—By the *El Paso*=New Orleans:
Manhattan Rubber Mfg. Co..... 1,500
G. Amsinck & Co..... 1,000
Eggers & Heinlein..... 500
P. Harmony Nephews Co..... 800
Graham, Hinkley & Co..... 200
A. T. Morse & Co..... 2,500 6,500

OCT. 21.—By the *Alleghany*=Greystown, etc.:
Andreas & Co..... 3,000
A. D. Straus & Co..... 3,000
E. B. Strout..... 1,500
Livingston & Co..... 1,000
G. Amsinck & Co..... 1,500
American Trading Co..... 1,500
Jimenez & Escobar..... 200
Lawrence Johnson & Co..... 600 13,800

AFRICANS.

SEPT. 25.—By the *Majestic*=Liverpool:
George A. Alden & Co..... 16,000
Reimers & Co..... 11,000
Otto Meyer..... 4,500 31,500

SEPT. 25.—By the *Patricia*=Hamburg:
A. T. Morse & Co..... 48,000
Otto Meyer..... 47,000
Reimers & Co..... 10,000 105,000

SEPT. 29.—By the *Etruria*=Liverpool:
Reimers & Co..... 22,000
Joseph Cantor..... 17,500
William Wright & Co..... 1,000 40,500

SEPT. 30.—By the *Friesland*=Antwerp:
Joseph Cantor..... 13,000

SEPT. 30.—By the *Bovic*=Liverpool:
Robinson & Tallman..... 22,500

MECHANICAL GOODS.

OCT. 1.—By the *Bluehr*=Hamburg:
A. T. Morse & Co..... 12,000
Otto Meyer..... 6,000
Reimers & Co..... 86,000

OCT. 4.—By the *Campania*=Liverpool:
United States Rubber Co..... 6,000
Joseph Cantor..... 1,500
William Wright & Co..... 1,000 9,500

OCT. 6.—By the *Vaderland*=Antwerp:
Reimers & Co..... 52,000
A. T. Morse & Co..... 46,000
Joseph Cantor..... 7,500
United States Rubber Co..... 6,000 111,500

OCT. 8.—By the *Graf Waldersee*=Hamburg:
A. T. Morse & Co..... 27,000
Reimers & Co..... 4,500 31,500

OCT. 9.—By the *Teutonic*=Liverpool:
George A. Alden & Co..... 43,000
Otto Meyer..... 3,000 46,000

OCT. 11.—By the *Dona Maria*=Lisbon:
George A. Alden & Co..... 44,500

OCT. 13.—By the *Umbria*=Liverpool:
A. T. Morse & Co..... 21,000
George A. Alden & Co..... 20,000 41,000

OCT. 13.—By the *St. Paul*=Southampton:
Reimers & Co..... 7,000
H. A. Gould & Co..... 6,000 13,000

OCT. 13.—By the *Kroonland*=Antwerp:
George A. Alden & Co..... 556,000
Reimers & Co..... 75,000 631,000

OCT. 15.—By the *Oceanic*=Liverpool:
Reimers & Co..... 13,000
George A. Alden & Co..... 6,500
Otto Meyer..... 9,000 28,500

OCT. 16.—By the *Pennsylvania*=Hamburg:
George A. Alden & Co..... 21,500
Reimers & Co..... 11,000
Otto Meyer..... 6,000
A. T. Morse & Co..... 5,000 43,000

OCT. 18.—By the *Peninsular*=Lisbon:
George A. Alden & Co..... 22,000
Reimers & Co..... 11,500 33,500

OCT. 21.—By the *Moltke*=Hamburg:
Otto Meyer..... 76,000
George A. Alden & Co..... 42,000
Reimers & Co..... 33,500
A. T. Morse & Co..... 34,000 185,500

OCT. 24.—By the *Majestic*=Liverpool:
Joseph Cantor..... 13,000
George A. Alden & Co..... 3,000 16,000

EAST INDIAN.

SEPT. 26.—By the *Nyanza*=Calcutta:
Reimers & Co..... 2,000

OCT. 6.—By the *Spithead*=Singapore:
Windmuller & Reolker..... 22,500
George A. Alden & Co..... 12,500 35,000

OCT. 13.—By the *St. Paul*=Southampton:
Reimers & Co..... 7,000

OCT. 14.—By the *Beneleuch*=Singapore:
D. P. Cruikshank..... 16,000

OCT. 20.—By the *St. Louis*=Southampton:
Reimers & Co..... 5,000
Otto Meyer..... 4,500 9,500

PONTIANAK.

SEPT. 29.—By the *Braemar*=Singapore:
Robert Brans & Co..... 11,000

EAST INDIANS—Continued.		
OCT. 6.—By the <i>Spithead</i> =Singapore:		
J. H. Becknagel & Co.....	42,000	
OCT. 14.—By the <i>Beneluch</i> =Singapore:		
George A. Alden & Co.....	270,000	
Robert Brans & Co.....	250,000	
Robinson & Taliman.....	110,000	
William Wright & Co.....	200,000	
W. H. Russell & Co.....	110,000	940,000
OCT. 22.—By the <i>Asama</i> =Singapore:		
George A. Alden & Co.....	100,000	
W. H. Russell & Co.....	35,000	135,000
GUTTA-PERCHA AND BALATA.		
SEPT. 23.—By the <i>Patricia</i> =Hamburg:		
To Order.....	6,500	
OCT. 1.—By the <i>Blucher</i> =Hamburg:		
To Order.....	6,000	
OCT. 8.—By the <i>Graf Waldersee</i> =Hamburg:		
To Order.....	11,500	

OCT. 14.—By the <i>Beneluch</i> =Singapore:		
George A. Alden & Co.....	1,500	
BALATA.		
SEPT. 28.—By the <i>Prins Maurits</i> =Surinam.		
G. Amsinck & Co.....	2,000	
George A. Alden & Co.....	500	2,500
SEPT. 29.—By the <i>St. Louis</i> =Southampton:		
Henry A. Gould & Co.....	4,500	
CUSTOM HOUSE STATISTICS.		
PORT OF NEW YORK—SEPTEMBER.		
Imports:		
India-rubber.....	3,866,811	\$1,824,187
Gutta-percha.....	8,398	9,661
Gutta-jelutong (Pontianak)...	908,746	19,907
Total.....	4,783,969	\$1,853,845
Exports:		
India-rubber.....	63,202	\$31,780
Reclaimed rubber.....	27,602	8,428
Rubber Scrap Imported.....	1,508,986	\$89,111

BOSTON ARRIVALS.		POUNDS.
SEPT. 2.—By the <i>Sachem</i> =Liverpool:		
Reimers & Co.—African.....	5,280	
SEPT. 8.—By the <i>Ultima</i> =Liverpool:		
Reimers & Co.—Caucho.....	7,476	
SEPT. 16.—By the <i>Sagamore</i> =Liverpool:		
George A. Alden & Co.....	11,160	
SEPT. 18.—By the <i>Victorian</i> =Liverpool:		
George A. Alden & Co.—African.....	2,384	
SEPT. 17.—By the <i>Chicago</i> =London:		
George A. Alden & Co.—African.....	4,618	
SEPT. 19.—By the <i>Deconian</i> =Liverpool:		
Livesey & Co.—African.....	1,102	
SEPT. 29.—By the <i>Michigan</i> =Liverpool:		
Reimers & Co.—African.....	19,588	
Total Imports.....	61,506	
[Value, \$21,401]		

SEPTEMBER EXPORTS OF INDIA-RUBBER FROM PARA.

IN KILOGRAMS. 1000 KILOGRAMS=2204.6 POUNDS.

EXPORTERS.	UNITED STATES.					EUROPE.					TOTAL.
	FINE.	MEDIUM.	COARSE.	CAUCHO.	TOTAL.	FINE.	MEDIUM.	COARSE.	CAUCHO.	TOTAL.	
Cmok, Prusse & Co.....	35,190	9,010	40,420	—	84,620	124,950	24,990	36,400	1,500	187,840	272,460
Frank da Costa & Co.....	—	1,424	86,568	150	88,142	101,638	13,172	47,716	—	162,526	250,668
Adelbert H. Alden.....	33,788	7,192	93,012	719	134,711	136,300	20,490	29,140	3,841	189,771	324,482
Singlehurst, Brocklehurst & Co.	—	—	—	—	—	4,932	955	1,084	—	6,971	6,971
Neale & Staats.....	—	—	15,960	—	15,960	16,965	2,946	8,312	998	29,221	45,181
Denis Crouan & Co.....	3,029	167	8,959	—	12,155	12,802	2,663	5,536	—	20,991	33,146
R. Suarez & Co.....	—	—	—	—	—	11,755	2,685	2,977	—	17,417	17,417
Pires, Teixeira & Co.....	—	—	—	—	—	5,300	—	2,323	—	7,623	7,623
Sundry small shippers.....	—	—	—	—	—	2,979	—	531	—	3,510	3,510
Direct from Iquitos.....	—	—	—	—	—	21,170	1,807	4,222	14,660	41,859	41,859
Direct from Manaos.....	203,813	72,402	36,298	6,257	318,770	239,124	49,343	23,251	18,201	329,919	648,689
Total for September.....	275,820	90,195	61,217	7,126	654,358	677,915	119,051	161,482	39,200	997,648	1,652,006
Total, July-August.....	549,657	154,443	516,115	92,429	273,644	785,140	114,725	246,837	226,987	1,373,689	2,647,733
TOTAL, CROP YEAR.....	825,477	205,638	797,332	99,555	1,928,002	1,463,055	233,776	408,319	266,187	2,371,337	4,299,339

OFFICIAL STATISTICS OF CRUDE INDIA-RUBBER (IN POUNDS).

UNITED STATES.				GREAT BRITAIN.			
MONTHS.	IMPORTS.	EXPORTS.	NET IMPORTS.	MONTHS.	IMPORTS.	EXPORTS.	NET IMPORTS.
August, 1902.....	3,446,372	198,146	3,248,226	August, 1902.....	2,872,688	2,435,440	437,248
January-July.....	30,308,134	2,102,630	28,205,504	January-July.....	29,076,096	17,790,528	11,285,568
Eight months, 1902.....	33,754,506	2,300,776	31,453,730	Eight months, 1902.....	31,943,784	20,225,958	11,722,816
Eight months, 1901.....	37,137,470	2,656,064	34,481,406	Eight months, 1901.....	35,513,520	21,383,488	14,130,032
Eight months, 1900.....	31,550,131	2,688,569	28,861,462	Eight months, 1900.....	42,306,208	23,056,424	19,249,784
GERMANY.				ITALY.			
MONTHS.	IMPORTS.	EXPORTS.	NET IMPORTS.	MONTHS.	IMPORTS.	EXPORTS.	NET IMPORTS.
August, 1902.....	2,761,000	1,191,080	1,569,920	August, 1902.....	93,500	660	92,840
January-July.....	19,546,780	7,583,180	11,963,600	January-July.....	870,760	80,960	789,800
Eight months, 1902.....	22,307,780	8,774,260	13,533,520	Eight months, 1902.....	964,260	81,620	882,640
Eight months, 1901.....	19,126,140	6,601,320	12,524,820	Eight months, 1901.....	1,048,300	92,840	955,460
Eight months, 1900.....	20,071,480	6,522,340	13,549,140	Eight months, 1900.....	1,065,100	—	—
FRANCE.				AUSTRIA-HUNGARY.			
MONTHS.	IMPORTS.	EXPORTS.	NET IMPORTS.	MONTHS.	IMPORTS.	EXPORTS.	NET IMPORTS.
August, 1902.....	1,564,640	708,180	856,460	August, 1902.....	142,560	220	142,340
January-July.....	10,013,520	4,917,660	5,095,860	January-July.....	1,600,280	10,780	1,589,500
Eight months, 1902.....	11,578,160	5,625,840	5,952,320	Eight months, 1902.....	1,742,840	11,000	1,731,840
Eight months, 1901.....	11,243,320	7,001,500	4,241,820	Eight months, 1901.....	1,727,220	19,580	1,707,640
Eight months, 1900.....	12,003,200	6,736,620	5,266,580	Eight months, 1900.....	—	—	—

NOTE.—German statistics include Gutta-percha, Balata, old rubber, and substitutes. Italian, French, and Austrian figures include Gutta-percha. The exports from the United States embrace the supplies for Canadian consumption.

